RFL INDUSTRIES, INC.
aka RADIO FREQUENCY LABS
aka DOWTY RFL INDUSTRIES, INC.
POWERVILLE ROAD
BOONTON, MORRIS COUNTY, NEW JERSEY
EPA ID# NJD002156677

GENERAL INFORMATION AND SITE HISTORY

The site is located on 15.9 acres in a rural/industrial area of Boonton, Morris County. It is bounded on the north by Johanson Manufacturing Corporation, on the south and east by Powerville Road and private residences and on the west by Aircraft Radio Corporation. The property is located on Block 12, Lots 19.1, 20 and 24. The population within a 4 mile radius of the site is approximately 49,000.

Radio Frequency Labs (RFL) was built on vacant land in 1922. The operation consisted of electroplating, metal finishing and printed circuit board manufacturing. The plating operation was discontinued in 1980 and moved to RFL's Newton, New Jersey facility. In 1983, the Dowty Group, a Delaware Corporation, purchased RFL and changed the name of the facility to Dowty RFL Industries, Inc. The metal finishing operation was eliminated in 1985 due to excessive cost of waste management practices. Presently, only soldering operations associated with circuit board manufacturing are conducted.

SITE OPERATIONS OF CONCERN

RFL Industries, Inc. electroplated and manufactured printed circuit boards and performed metal finishing of aluminum and steel parts since its inception in 1922. In 1980, the plating operation was abandoned and relocated to RFL's Newton, New Jersey facility. In 1985, the metal finishing operation was discontinued due to excessive cost of waste management responsibilities. Currently, Dowty RFL Industries, Inc. (the Dowty Group purchased the site in 1983) is involved solely in electronic component manufacturing for the communication industry.

The raw materials used in the electroplating and metal finishing operations were cadmium, lead, chromium and cyanide-based plating baths. Solvents, acids and bases were also used in the degreasing, cleaning and etching stages of production. Waste waters containing volatile organic compounds and heavy metals were neutralized in mixing tanks and piped to an on-site unlined surface impoundment/percolation lagoon at a rate of 3,000 to 3,500 gallons per day. The lagoon was located in the southeast section of the facility approximately 300 feet southeast of Building #12. Constructed in 1972, it was formed by excavating to a depth of 2 feet and forming the dike walls with the excavated material. After the diking material was put in place the total depth of the lagoon was 8 feet. The lagoon was triangular in shape measuring 120 feet by 100 feet by 80 feet. A spray aerator was installed in 1980 to reduce volatile organic compounds in the waste water. The specific wastes contained in the discharge to the lagoon are listed in Attachment CC. In July 1983, a closed looped treatment system was emplaced and all discharges to the lagoon ceased. This system consisted of a mixing chamber, settling chamber and sludge filter. All waste waters were collected and pH adjusted. The treated liquid was returned back to the

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03/30/90

system for reuse and the remaining sludge was stored on site in 55-gallon drums. Approximately 15 gallons of sludge was generated each month. The sludge was ultimately manifested off site as hazardous waste.

The current and only process at the facility includes loading pre-made components onto circuit boards and passing these boards through a wave solder machine. Preheated flux containing 90% isopropyl alcohol is applied to the boards prior to wave solder enabling the solder to flow more effectively. Approximately 10 gallons of waste flux is generated each month and stored in 55-gallon drums. The waste is considered hazardous and is manifested off site. The circuit boards are cleaned in a Genesolv DFX solvent machine which uses trichlorofluoroethane. Approximately 5 gallons per year of waste is generated and manifested off site. All waste drums are stored on site for less than 90 days.

There are no reports of any spills or illegal discharges on site.

In February 1981, RFL filed a Part A Application with the USEPA requesting a permit to conduct hazardous waste activities. The USEPA subsequently referred the request to the NJDEP for issuance of the permit. RFL was granted interim status as a Treatment, Storage and Disposal (TSD) facility in May 1982. All discharges to the on site lagoon were halted as of July 1, 1983. A closure plan for the lagoon was submitted to the NJDEP in December 1983 by Ground/Water Technology, Inc. of Denville, New Jersey. In December 1984, the NJDEP/DWR issued a NJPDES permit to RFL which incorporated the closure activities. RFL hired Kramer Chemicals, Inc. of Clifton, New Jersey to perform the closure during the period of December 2, 1985 through December 10, 1985. All freestanding liquids were removed from the lagoon and transported, accompanied by manifest, to the Dupont Company Environmental Services Chambers Works, Deepwater, New Jersey. A total of 15,500 gallons of liquid was removed and handled as a hazardous waste. All sludge, piping pallets and vegetation present in the lagoon were removed and trucked, accompanied by manifest, to Wayne Disposal, Belleville, Michigan. Five-hundred tons of waste was transported as a hazardous waste. (Note: Pre-sampling of both liquid and solid waste from the lagoon indicated the materials were not hazardous waste but RFL chose to manifest as hazardous.) After removal, the lagoon was backfilled using material from the containment dike and by scraping the native soil around the lagoon to smooth out contour grades. The NJDEP/DWR/Bureau of Water Quality Management reviewed the closure certification in March 1986 and approved all activities. Although proper closure of the on-site lagoon was achieved, the facility currently maintains a Generator/TSD status because of groundwater contamination which remains beneath the site.

GROUNDWATER ROUTE

The site is located on the buried portion of the southeast side of the northeast-southwest trending valley of Precambrian gneiss of the New Jersey Highlands. Approximately 25 to 45 feet beneath the surface is the uneven bedrock. The bedrock appears to form a shelf on the side of the main valley as depths greater than 100 feet have been found adjacent to the site. The soil is predominantly Wisconsin stratified drift, a glacial deposit made up of layers of sand and gravel, sand and silty sand. Portions of the site are underlain by as much as 8 feet of fill.

The groundwater is located at a depth of 10 feet and flows south from the on-site lagoon to an unnamed stream which passes through the site. The stream eventually flows to the Rockaway River approximately 1 mile to the south. Ninety percent of the residences of Boonton or approximately 40,000 people are supplied with potable water from individual private wells. Prior to the discovery of groundwater contamination on site, RFL drew water for domestic uses from a dug well. In addition, a three well point system produced water for air conditioning.

In February 1979, RFL applied for NPDES Permit No. NJ0032972 with the USEPA. A draft permit was prepared by the USEPA and submitted to the NJDEP. The State did not approve the permit because of possible groundwater contamination from the activities in the on-site lagoon. In June 1980, the NJDEP instructed RFL to install three monitoring wells (MW) to determine if groundwater had been affected. These wells were subsequently installed by Moretrench American Well Company of Rockaway, New Jersey. MW-1 was drilled to a depth of 29 feet and upgradient from the lagoon. MW-2 (26 feet deep) and MW-3 (30 feet deep) were placed downgradient of the lagoon. In July 1980, the NJDEP/Division of Water Resources (DWR) sampled RFL's discharge, lagoon and monitoring wells. High levels of volatile organics were discovered in all samples. Sampling was continued for three consecutive months followed by quarterly monitoring thereafter. The samples were collected and analyzed by Industrial Corrosion Management Incorporated of Randolph, New Jersey. In addition to groundwater sampling, the discharge pipe to the lagoon, the lagoon and an upstream and downstream sample of the unnamed stream were collected. Again, results indicated the presence of volatile organics in all areas of sampling. In August 1983, a fourth monitoring well was installed downgradient of the lagoon to further delineate the groundwater problem. MW-4 was installed to a depth of 24 feet.

In December 1984, Dowty RFL was granted an interim NJPDES permit (No.0099104) to monitor groundwater as an Industrial Waste Mangement Facility (IWMF) and to implement closure of the on-site lagoon. All four monitoring wells were sampled and analyzed on a quarterly basis. In March 1988, RFL renewed its NJPDES permit which will again expire in 1993. RFL requested termination of its NJPDES permit as recent sampling results have not revealed any detectable levels of contamination. The permit was not terminated but sampling was modified from quarterly to semi-annually until a total of four consecutive sampling events report no detectable levels of contaminants.

Sampling data from various sampling episodes will be discussed below.

SURFACE WATER ROUTE

A small unnamed stream passes through the eastern section of the site. On site the stream is diverted forming a Fire Pond and is reverted back to a stream after leaving the site. This stream is a small tributary that leads to the Rockaway River approximately 1 mile to the south. An upstream and two downstream samples are collected on a quarterly basis as part of the groundwater monitoring program at RFL. Sampling results are discussed below. There are wetland areas north and south of the site within a 1 mile radius.

The Rockaway River and accompanying stream are both used for recreational purposes.

AIR ROUTE

Prior to 1978, RFL operated an on-site incinerator to burn trash. This activity was permitted (permit P-8944) by the Division of Environmental Quality/Bureau of Air Pollution. After 1978 this permit was never renewed.

There are no reports of violations of this permit or any other air violations.

SOIL

There is no evidence of any release or spills of hazardous waste to the soil. The only releases noted are to the on-site lagoon. The lagoon has undergone a certified closure. Sampling data from various sampling episodes will be discussed below.

DIRECT CONTACT

There is no potential for direct contact to areas on site as the site is enclosed by a fence.

FIRE AND EXPLOSION

There is no added potential for fire and explosion because of the nature of the operation on site.

ADDITIONAL CONSIDERATIONS

There is a potential for damage to flora, fauna or off-site property if groundwater contamination migrates to the unnamed stream.

ENFORCEMENT ACTIONS

In January 1982, the USEPA issued a Complaint, Compliance Order, and Notice of Opportunity for Hearing and subsequently a Consent Agreement and Final Order in March 1982 based on an inspection performed at the site. The inspection revealed the generation and storage of hazardous waste in an unsafe manner. Five to six leaking drums of hazardous waste were stored on the ground surrounded by evidence of spills.

In July 1983, NJDEP/DWR issued an Administrative Consent Order for the discharge of pollutants without a valid NJPDES permit.

In August 1984, the NJDEP/DWR issued a Notice of Violation for failure to submit the required non-sudden liability insurance to the Division of Hazardous Waste Engineering.

In July 1986, NJDEP/DWM issued a Notice of Violation for numerous hazardous waste and maintanence of records violations.

In November 1987, NJDEP/DHWM issued a Notice of Violation for omissions in the Site Contingency Plan.

Summary of Sampling Data

1. Sampling Date: January 30, 1979

Sampled By: NJ Department of Health (NJDOH)

Samples: Five lagoon water samples

Laboratory: NJDOH

Parameters: Volatile organic and metal scan

Sample Description: Wastewater influent and several area lagoon samples were collected

Contaminants Detected:

Contaminant	Concentration
trichloroethane	480 ppb
trichloroethylene	225 ppb
toluene	55 ppb
chloroform	225 ppb

QA/QC: None

File Location: NJDEP/DWR/Bureau of Groundwater Pollution Abatement (BGWPA)

2. Sampling Date: July 10, 1980

Sampled By: NJDEP/DWR

Samples: Six groundwater, one surface water and two lagoon samples were collected

Laboratory: NJDOH

Parameters: Volatile organic and metal scan

Sample Description: Three groundwater monitoring wells, three water supply wells, one fire pond sample and two lagoon water samples were collected

Contaminants Detected: Two lagoon samples:

Contaminant	Concentration
1,1,1-trichloroethane	971 to 2,607 ppb
trichloroethylene	660 to 1,243 ppb
tetrachloroethylene	18 to 56 ppb
toluene	21 to 26 ppb

Fire Pond:

toluene	26 ppb
1,1,1-trichlorethane	971 ppb
trichloroethylene	660 ppb
tetrachloroethylene	18 ppb
xylene	1.7 ppb

MW1

Contaminant	Concentration
chloroform	1.1 ppb
benzene	0.3 ppb
trichlorofluoromethane	2.3 ppb
1,1,1-trichloroethane	1.3 ppb

MW2

toluene	16.1 ppb
trichloroethylene	26.0 ppb
ethylbenzene	1.3 ppb
1,1,2-trichloroethane	2.5 ppb
carbon tetrachloride	1.1 ppb
1,2-dichloroethane	9.0 ppb
tetrachloroethylene	2.8 ppb
chloroform	1.7 ppb
1,1,1-trichloroethane	22.6 ppb
1,1-dichloroethylene	2.1 ppb

MW3

1,2-dichloroethylene	2.0 ppb
1,2-dichloroethane	2.6 ppb
trichloroethylene	6.0 ppb
1,1,1-trichloroethane	11.1 ppb
tetrachloroethylene	7.4 ppb

Supply Well #1

methylene chloride	3.2 ppb
tetrachloroethylene	1.4 ppb
trichloroethylene	8.1 ppb
1,1,1-trichloroethane	8.3 ppb

Supply Well #2

trichloroethylene	0.5 ppb
1,1,1-trichloroethane	1.3 ppb
1,1-dichloroethylene	3.4 ppb

Supply Well #3

trichloroethylene	5.0 ppb
1,1,1-trichloroethane	9.8 ppb
trichlorofluoromethane	2.7 ppb
carbon tetrachloride	0.9 ppb
1,1-dichloroethylene	1.3 ppb
chloroform	1.2 ppb

QA/QC: None

File Location: NJDEP/DWR/BGWPA

3. Sampling Date: September 24, 1980

Sampled By: Eastern Chemical
P.O. Box 354, Park Station
Paterson, New Jersey

Samples: Two aqueous lagoon samples were collected

Laboratory: United States Testing Company
1415 Park Avenue
Hoboken, NJ 07030
(201) 792-2400

Parameters: Volatile organic scan

Sample Description: One lagoon water sample and one point of discharge water sample was collected

Contaminants Detected:

Lagoon:

Contaminant	Concentration
1,1,1-trichloroethane	220 ppb
trichloroethylene	72 ppb

Point of Discharge:

Contaminant	Concentration
1,1,1-trichloroethane	1,700 ppb
trichloroethylene	560 ppb

QA/QC: None

File Location: NJDEP/DWR/BGWPA

4. Sampling Date: November 5, 1980

Sampled By: Eastern Chemical Co.

Samples: Two lagoon sludge and two drinking water samples were collected

Laboratory: United States Testing Company

Parameters: Volatile organic scan

Sample Description: Two samples from the base of the lagoon and two samples from the on-site potable wells were collected

Contaminants Detected: No hazardous waste constituents above the detection limit of 5 ppb were found in the drinking water samples

Sludge Samples:

Contaminant	Concentration
methylene chloride	3.7-550 ppb
1,1-dichloroethane	6.88-48 ppb
1,2-dichloroethane	9.21-18 ppb
1,1,1-trichloroethane	10.91-510 ppb
trichloroethylene	19.14-230 ppb

QA/QC: None

File Location: NJDEP/DWR/BGWPA

5. Sampling Date: May 1, 1981

Sampled By: Industrial Corrosion Management Corporation (ICMC)
1152 Route 10
Randolph, New Jersey 07869

Samples: Three groundwater samples were collected

Laboratory: ICMC

Parameters: Volatile organic scan

Sample Description: One sample from each of the three site monitoring wells

Contaminants Detected: MW1 - none
MW2

Contaminant	Concentration
trichloroethylene	5.6 ppb
1,1,1-trichloroethane	3.4 ppb
1,2-dichloroethylene	3.7 ppb
1,1-dichloroethane	2.7 ppb

MW3

trichloroethylene	49 ppb
1,1,1-trichloroethane	21.3 ppb
1,2-dichloroethylene	3.3 ppb
1,1-dichloroethane	27.2 ppb
methylene chloride	9.8 ppb

QA/QC: None

File Location: NJDEP/DWR/BGWPA

6. Sampling Date: July 14, 1982 thru October 29, 1984 approximately three times per year.

Sampled By: ICMC

Samples: On each sampling date four groundwater, three surface water and one lagoon sample were collected

Laboratory: ICMC

Parameters: Volatile organic scan, hexavalent and total chromium, lead, nickel and oil and grease

Sample Description: Four on-site monitoring wells, one upstream and two downstream and one lagoon sample were collected

Contaminants Detected

MW1

Contaminant	Concentration
1,1-dichloroethane	0 to 69.6 ppb
1,1,2-trichloroethane	0 to 9.4 ppb

MW2
Total volatile organics (TVO) ranged from 10 to 1653 ppb.

MW3
TVOs ranged from 0.97 to 173.5 ppb

MW4
No hazardous waste constituents were detected

Downstream
TVOs ranged from 1.7 to 196.7 ppb

Upstream

Contaminant	Concentration
chloroform	0.4 ppb
1,1,1-trichloroethane	0.3 ppb

Lagoon
TVOs ranged from 7.7 to 453 ppb

Contaminant	Concentration
hexavalent chromium	110 to 487 ppb
chromium	4 to 1,840 ppb
lead	11 to 2,490 ppb

(See specific results in Attachment S8)

QA/QC:	ICMC is a New Jersey State certified lab #14116.
File Location:	NJDEP/DWR/BGWPA
7. Sampling Date:	September 17, 1985
Sampled By:	USEPA
Sample:	Four groundwater monitoring well samples
Laboratory:	USEPA
Parameters:	Total organic carbon and halides, pH, specific conductivity, cyanide, hexavalent chromium, metal scan, and purgeable organics
Sample Description:	Aqueous samples from four site monitoring wells
Contaminants Detected:	Elevated levels of methylene chloride, trichloroethylene, toluene and tetrachloroethylene were detected (See Table 1-5 Attachment S9)
QA/QC:	One field blank was prepared
File Location:	NJDEP/DWR/BGWPA

<u>Recommendation</u>
The Bureau of Planning and Assessment recommends no further action as the on-site groundwater problem is being addressed by Division of Water Resources/Bureau of Ground Water Pollution Abatement.

Submitted by:

FRANK SORCE
HSMS III
BUREAU OF PLANNING AND ASSESSMENT
MARCH 30, 1990

RFL INC.

Agency	Phone No.	Contact	Date	File Y/N Reviewed
Div. Hazardous Site Mitigation				
A. Central File	(609)292-3203			
B. B.of Env.Evaluation and Risk Assmnt.	(609)633-6801			
C. Site Management	(609)984-2900			
D. Other				
Other N.J.DEP				
A. ORS (DEP Attorneys)	(609)292-5697			
B. Div.of Law (Att.Gen.Office)	(609)984-3900			
C. Div.of Science and Research	(609)984-6070			
D. Div.of Fish & Game				
E. Right to Know	(609)292-6714			
F. Off.of Env.Anal. (aerial photos)	(609)292-8206			
F. Other				
N.J. Dept.of Health				
N.J. State Library	(609)292-6220			
U.S.EPA				
A. Surveilance and Monitoring Branch	(201)321-6605			
B. Response and Prevention Branch	(201)321-6658			
C. Other				
Local Authorities				
A. Health Officer				
B. Tax Assessor or Town Clerk	201 402-4004		12/27/89	Y
C. Other (Fire,Police, Public Works,etc..)				

BUREAU OF PLANNING AND ASSESSMENT
FILE/DATA CHECK SHEET
Developed by NJDEP DHWM/BPA 1/14/1988

Agency	Phone No.	Contact	Date	File Y/N	Reviewed
N.J. DEP Div. Water Resources					
A. Central File	(609) 292-0400				
B. Regional Enforcement Office.	201-299-7592	Chuck Zigmont	1/2/90	Y	N
C. Geological Survey	(609) 292-0668				
D. Water Allocation (well logs) (radius program)	(609) 984-6831 (609) 292-2957				
E. Groundwater Quality Mgt.	(609) 292-0424				
F. Indust. Waste Mgt. (NJPDES permits)	(609) 292-4860		12/22/89	Y	
G. Other	Ground WATER Pollution ABATEMENT	Guy Tomason. 292-8427		Y	
Div. Haz. Waste Mgnt.					
A. Regional Enforcement Office	201-299-7570		11/16/89	Y	
B. Case Management	(609) 633-0701				
C. ECRA	(609) 633-7141		Bill	Y	
D. Haz. Waste Eng.	(609) 292-9880				
E. Other					
Div. Env. Quality					
A. Reg. Air Pollution Control Office	201-299-7700		11/16/89	Y	
B. Office of Quality Assurance	(609) 292-3950				
C. Other					
Div. Solid Waste Mgt.					
A. File Room	(609) 292-0112				
B. Enforcement Office	(609) 426-0791				
C. Solid Waste Eng.	(609) 292-7875				

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POWERVILLE ROAD
BOONTON, MORRIS COUNTY, NEW JERSEY
EPA ID# NJD002156677

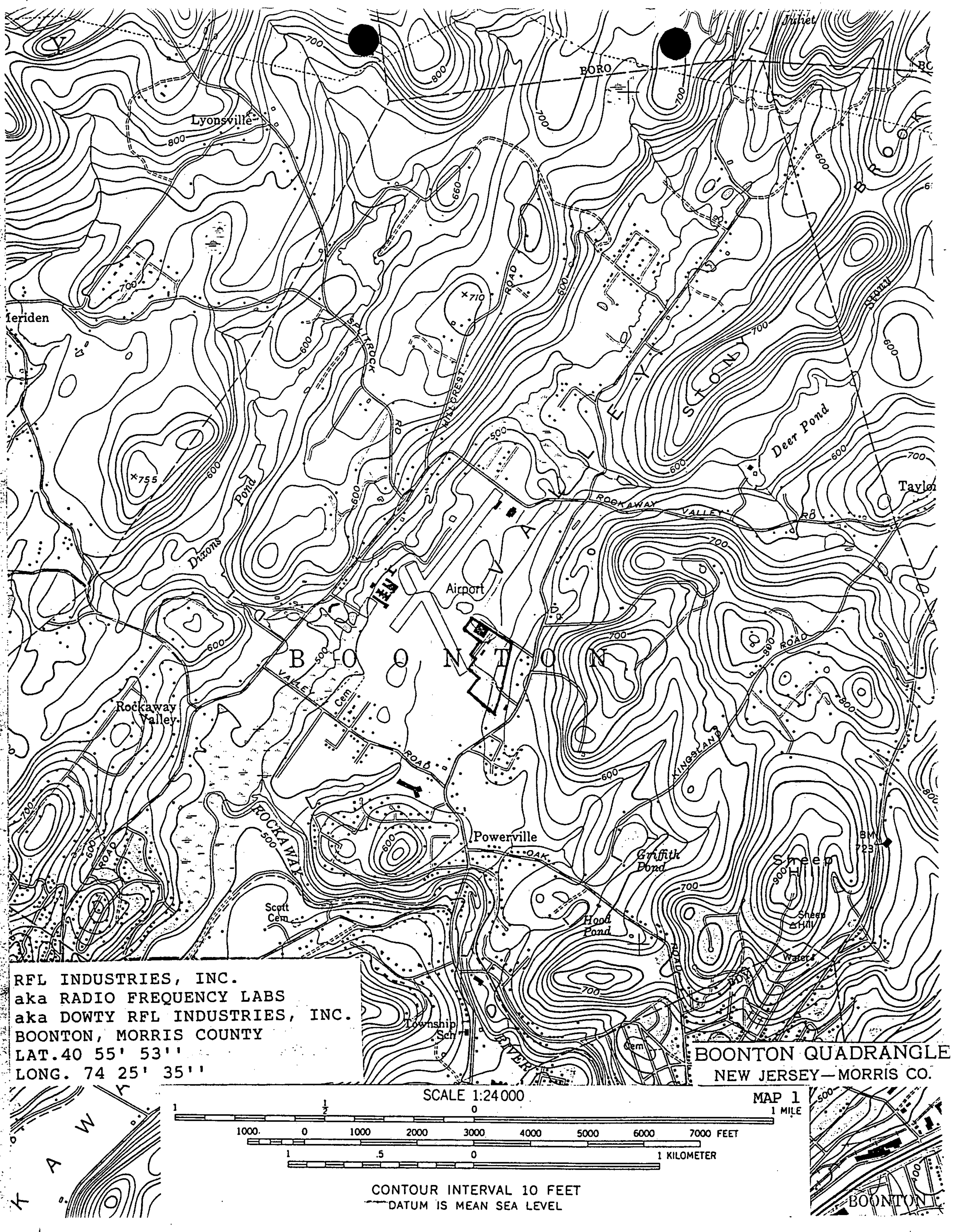
MAPS

1. USGS QUADRANGLE MAP - BOONTON QUAD
2. (a,b,c) SITE MAP
3. TAX MAP
4. NJ ATLAS BASE MAP SHEET 22 & 25
5. GEOLOGIC OVERLAY
6. WATER SUPPLY MAP
7. WATER WITHDRAWAL MAP
8. COUNTY ROAD MAP

ATTACHMENTS

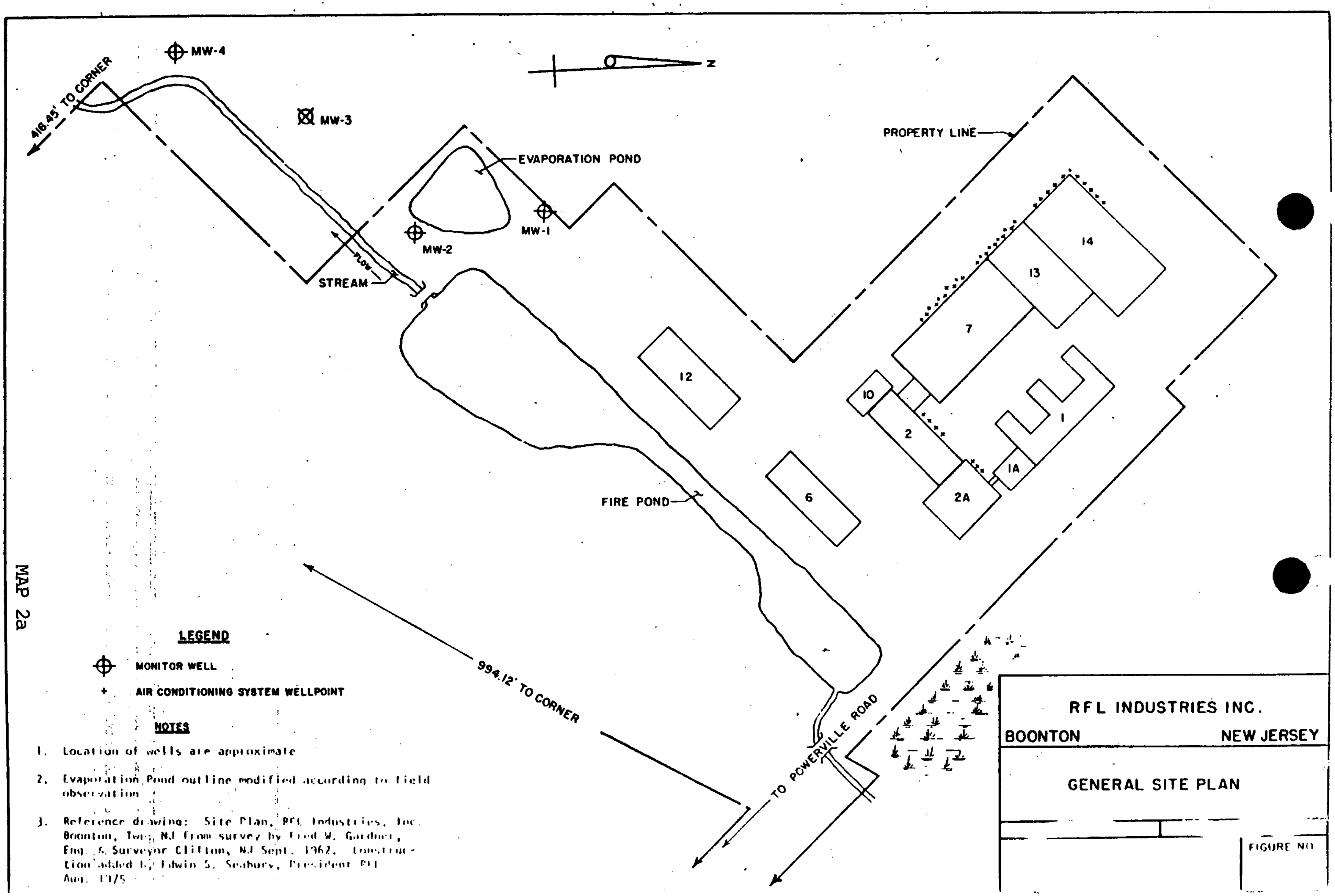
A. NJDEP/DWR LETTER DENYING TERMINATION OF NJPDES PERMIT, JULY 1989
B. RFL REQUEST FOR TERMINATION OF NJPDES PERMIT, JUNE 1989
C. NJDEP/DHWM INSPECTION REPORT
D. AMERICAN DEWATERING CORPORATION PUMP TEST REPORT, APRIL 1966
E. GROUND/WATER TECHNOLOGY PRELIMINARY HYDROGEOLOGICAL INVESTIGATION, FEBRUARY 1982
F. NPDES APPLICATION
G. RFL REQUEST FOR REVISIONS OF MONITORING REQUIREMENTS
H. NJDEP/DWR LETTER DENYING TERMINATION OF NJPDES PERMIT, FEBRUARY 1987
I. NJPDES PERMIT, MARCH 1988
J. NJPDES PERMIT, DECEMBER 1984
K. SUBMITTALS REQUIRED BY NJPDES PERMIT PREPARED BY GROUND/WATER TECHNOLOGY, JANUARY 1985
   1. MONITORING WELL CERTIFICATION FORMS
   2. GROUND WATER QUALITY ASSESSMENT PROGRAM
   3. FINAL SCHEDULE FOR CLOSURE
L. USEPA COMPLAINT, COMPLIANCE ORDER, AND NOTICE OF OPPORTUNITY FOR HEARING, JANUARY 1982
M. USEPA CONSENT AGREEMENT AND FINAL ORDER, MARCH 1982
N. NJDEP/DWR ADMINISTRATIVE CONSENT ORDER(ACO), JULY 1983
O. NJDEP/DWM NOTICE OF VIOLATION, AUGUST 1984
P. NJDEP/DWM NOTICE OF VIOLATION, JULY 1986
Q. NJDEP/DHWM NOTICE OF VIOLATION, NOVEMBER 1987
R. AIR PERMIT FOR TRASH INCINERATOR
S. (1-9) SAMPLING DATA FROM 1978 TO 1985
T. USEPA EVALUATION AND SITE INSPECTION
U. LAGOON SOIL, SLUDGE AND WATER SAMPLE ANALYSES FOR HAZARDOUS WASTE ENGINEERING REVIEW
V. RFL LAGOON CLOSURE PLAN SUBMITTED BY GROUND/WATER TECHNOLOGY
W. HAZARDOUS WASTE ENGINEERING FACILITY STATUS LETTER

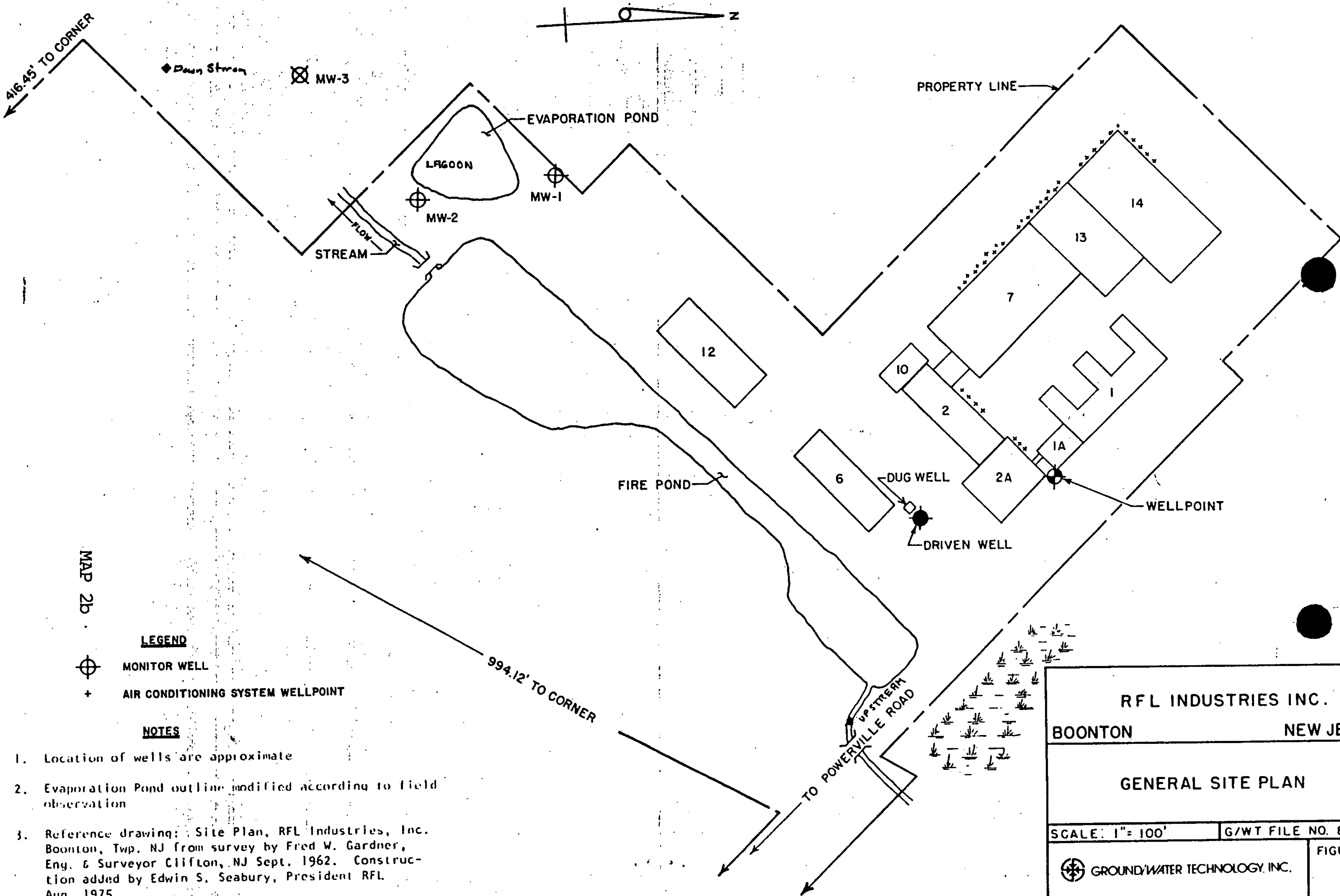
X. NJDEP/DWR LAGOON CLOSURE CERTIFICATION APPROVAL
Y. GROUND/WATER TECHNOLOGY LAGOON CERTIFICATION
Z. HAZARDOUS WASTE MANIFESTS
AA. RFL SITE CONTINGENCY PLAN
BB. JRB ASSOCIATES DEVELOPMENT OF TECHNICAL ELEMENTS OF A NPDES PERMIT
CC. LIST OF WASTES DEPOSITED IN LAGOON



RFL INDUSTRIES, INC.
aka RADIO FREQUENCY LABS
aka DOWTY RFL INDUSTRIES, INC.
BOONTON, MORRIS COUNTY
LAT.40 55' 53''
LONG. 74 25' 35''

ATTACHMENT 1





MAP 2b

LEGEND

MONITOR WELL

\+ AIR CONDITIONING SYSTEM WELLPOINT

NOTES

1. Location of wells are approximate
2. Evaporation Pond outline modified according to field observation
3. Reference drawing: Site Plan, RFL Industries, Inc. Boonton, Twp. NJ from survey by Fred W. Gardner, Eng. & Surveyor Clifton, NJ Sept. 1962. Construction added by Edwin S. Seabury, President RFL Aug. 1975

RFL INDUSTRIES INC.

BOONTON NEW JEI

GENERAL SITE PLAN

SCALE: 1"= 100' | G/WT FILE NO. 81

GROUNDWATER TECHNOLOGY, INC. FIGUI

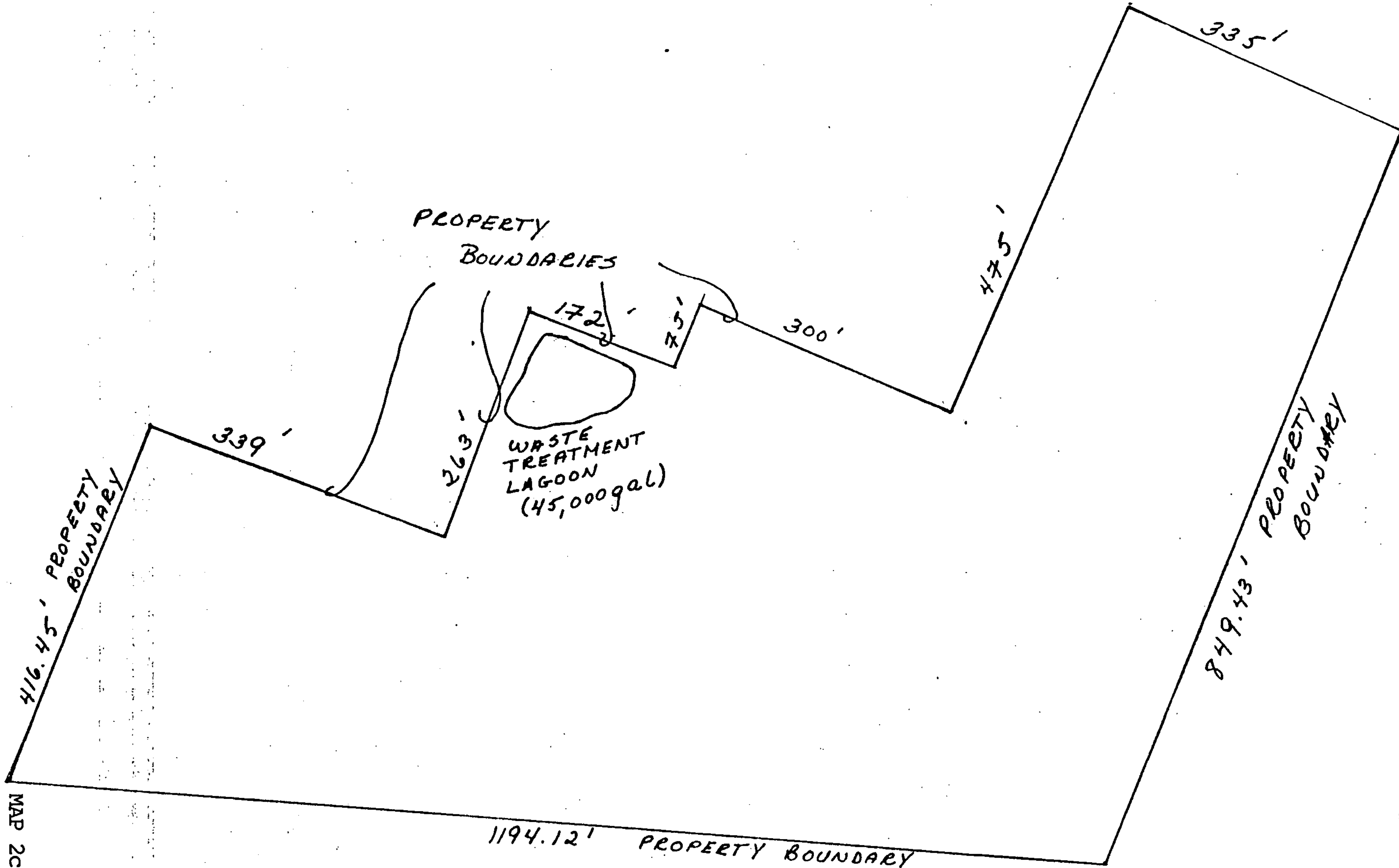
Form Approved OMB No. 158-S80004

NJD002156677 RFL INDS.

Continued from page 4.

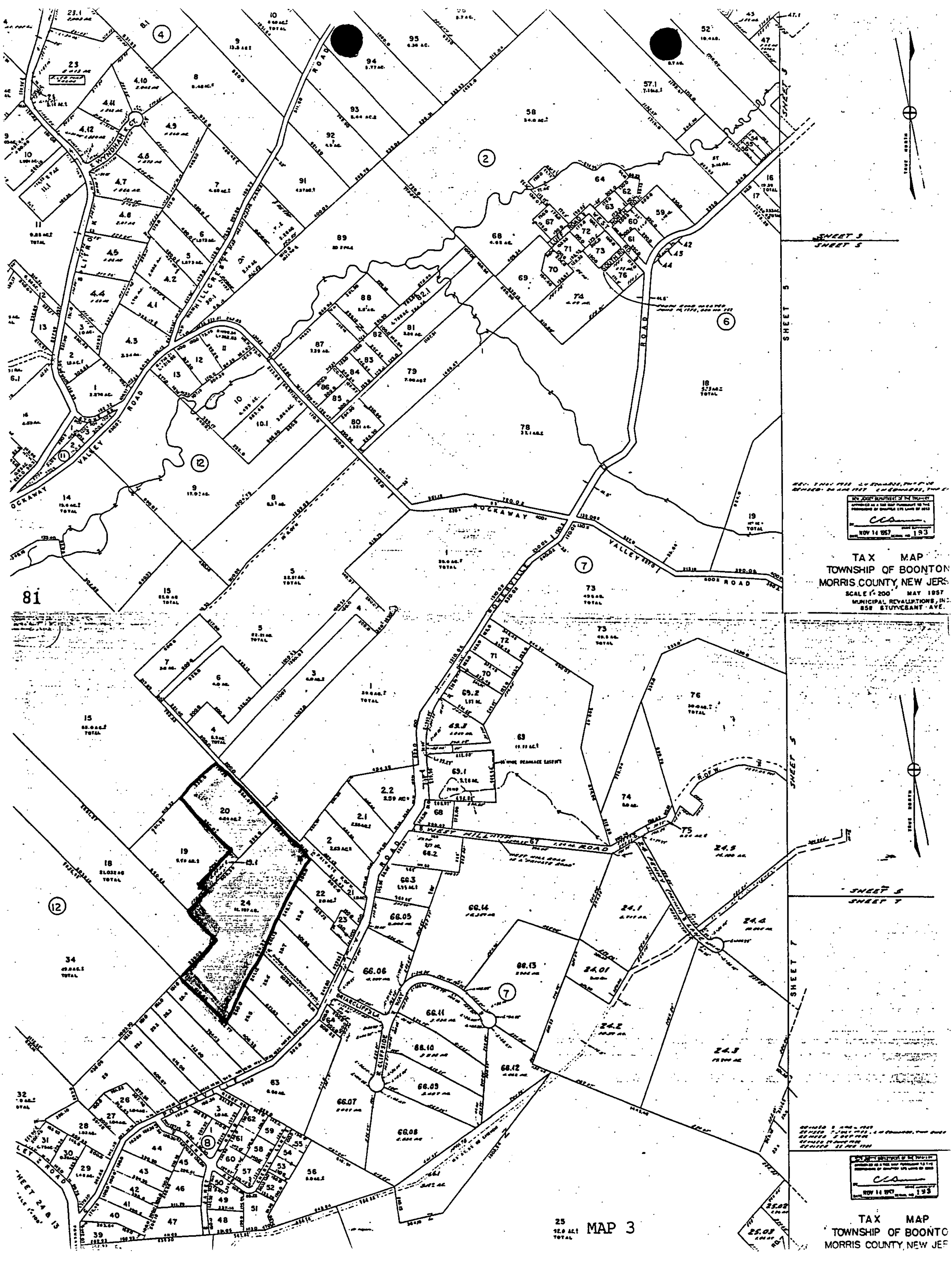
V. FACILITY DRAWING (see page 4)

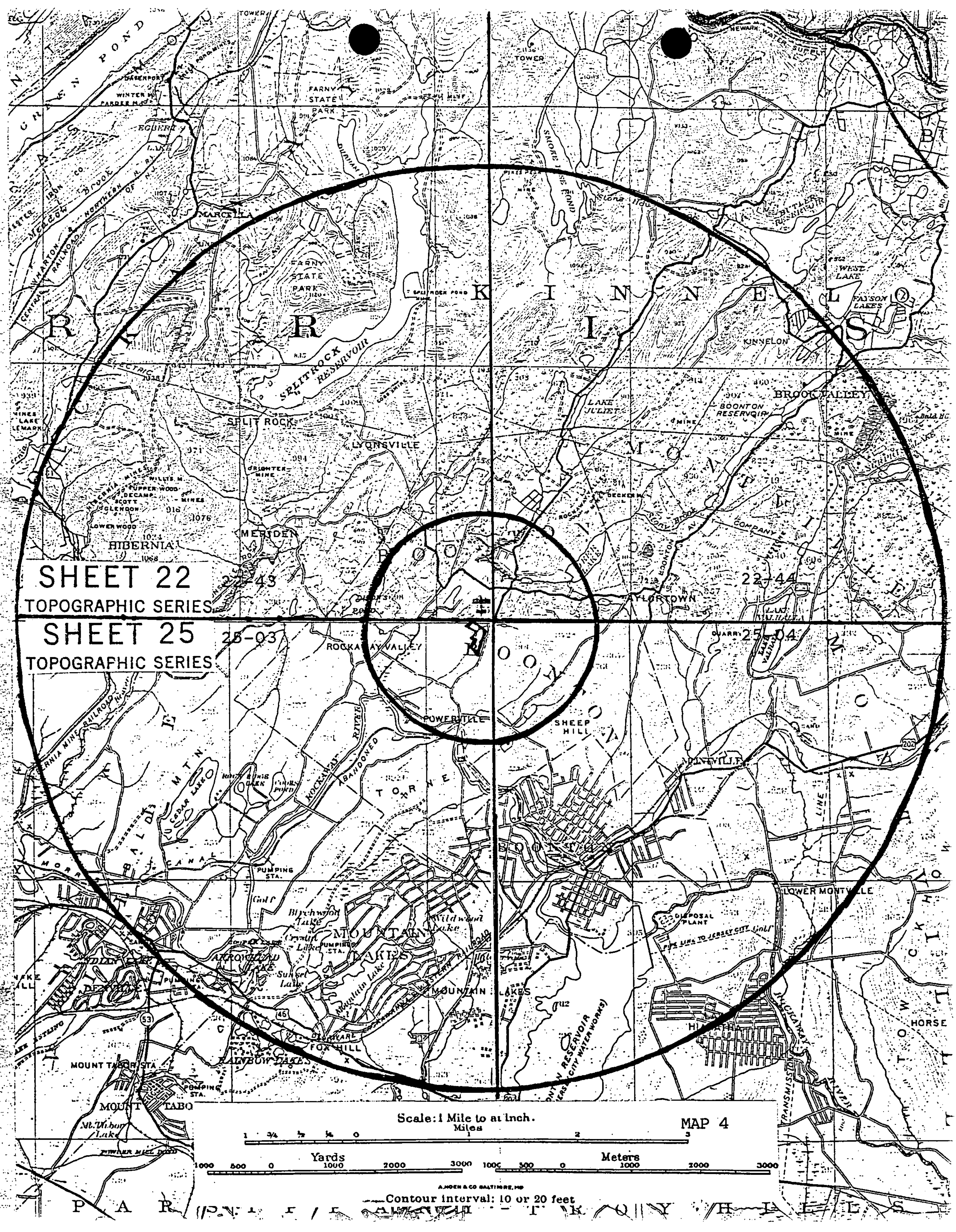
MAP 2C



RFL Industries, Boonton N.J.

Scale 1" ≈ 157'


TAX MAP
TOWNSHIP OF BOONTON
MORRIS COUNTY, NEW JERS
SCALE 1"= 200'   MAY 1957
MUNICIPAL REVALUATIONS, INC.
858 STUYVESANT AVE.
NOV 14 1957
ROCKAWAY VALLEY ROAD
HILLCREST RD.
WYNDHAM CT.
WEST HILL ROAD
POWERVILLE ROAD
BRIARCLIFF LA.
CLIFFSIDE WAY
SHEET 3
SHEET 5
SHEET 7
TRUE NORTH
81
MAP 3



SHEET 22
TOPOGRAPHIC SERIES
SHEET 25
TOPOGRAPHIC SERIES
22-43
22-44
25-03
25-04
MAP 4
Scale: 1 Mile to an Inch.
Miles
Yards
Meters
Contour interval: 10 or 20 feet
A. HOEN & CO. BALTIMORE, MD.
FARNY STATE PARK
SPLITROCK RESERVOIR
SPLIT ROCK
LYONSVILLE
MARCELLA
HIBERNIA
MERIDEN
KINNELON
BROOK VALLEY
BOONTON RESERVOIR
LAKE JULIET
TAYLORTOWN
ROCKAWAY VALLEY
POWERVILLE
SHEEP HILL
MONTVILLE
LOWER MONTVILLE
TORNE
MOUNTAIN LAKES
FOX HILL
RAINBOW LAKES
MOUNT TABOR STA.
MOUNT TABOR
PUMPING STA.
DISPOSAL PLANT
PIPE LINE TO JERSEY CITY
WEST LAKE
FAYSON LAKES
BUTLER RESERVOIR
TOWER

LEGEND FOR ATLAS SHEET 22

△ —— INDUSTRIAL WELL YIELD OVER 70 GALLONS PER MINUTE

□ —— PUBLIC SUPPLY WELL YIELDING OVER 70 GALLONS PER MINUTE

⊕ —— UNSUCCESSFULL ROCK WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

⊙ —— UNSUCCESSFULL SAND WELL YIELDING LESS THAN 70 GALLONS PER MINUTE

[T] —— NO TEST – NO DATA ON YIELD

——— – – FAULT (DASHED WHERE INFERRED)

——— – – CONTACT (DASHED WHERE INFERRED)

HIGHLANDS / PIEDMONT PHYSIOGRAPHIC PROVINCE BOUNDARY

QUATERNARY

Qa —— STRATIFIED DRIFT (WISCONSIN)

TRIASSIC

Trb —— BRUNSWICK FORMATION
Trbs —— BASALT FLOWS

DEVONIAN

Dsk —— SKUNNEMUNK CONGLOMERATE
Dbp —— BELLVALE SANDSTONE AND PEQUANAC SHALE
Dkn —— KANOUSE SANDSTONE
Don —— ONONDAGA FORMATION
Dsch —— SCHOHARIE FORMATION
Des —— ESOPUS FORMATION
Dg —— GLENERIE FORMATION
Dpe —— PORT EWEN FORMATION
Dmi —— MINISINK FORMATION
Dns —— NEW SCOTLAND FORMATION
Dkc —— KALKBERG AND COEYMANS FORMATION

SILURIAN

SDm —— MANLIUS FORMATION
Srdf —— RONDOUT, DECKER FERRY FORMATION
Sb —— BOSSARDVILLE FORMATION
Shf —— HIGH FALLS FORMATION
Ssg —— SHAWANGUNK CONGLOMERATE
Sd —— DECKER LIMESTONE AND LONGWOOD SHALE
Sgp —— GREEN POND CONGLOMERATE

LEGEND FOR ATLAS SHEET 22 (CONTINUED)

POST ORDOVICIAN

ns — NEPHELITE SYENITE
bb — BASIC VOLCANIC BRECIA
nt — BASIC DIKES

ORDOVICIAN

Omb — MARTINSBURG SHALE
Ojb — JACKSONBURG LIMESTONE

CAMBRO-ORDOVICIAN

€Ok — KITTATINNY LIMESTONE

CAMBRIAN

€h — HARDYSTON SANDSTONE

PRECAMBRIAN

gh — HORNBLENDE GRANITE AND GNEISS
ga — ALASKITE
gs — SYENITE
gd — GRANODIORITE GNEISS
gns — PYROXENE SYENITE
m — MARBLE AND SKARN
am — AMPHIBOLITE
ghb — HORNBLENDE AND BIOTITE GNEISS
gpx — PYROXENE GNEISS
hqa — HYPERSTHENE-QUARTZ-ANDESINE GNEISS
qs — SILLIMANITE GNEISS
gnm — MICROCLINE GNEISS
qo — QUARTZ-OLIGOCLASE GNEISS
qob — QUARTZ-OLIGOCLASE-BIOTITE GNEISS
qnb — BIOTITE-QUARTZ-FELDSPAR GNEISS

LEGEND

WATER SUPPLY

- AREA SERVED BY PRIVATE WATER SERVICE COMPANIES
- AREA SERVED BY REGIONALLY OWNED WATER SERVICE COMPANI
- AREA SERVED BY MUNICIPALLY OWNED WATER SERVICE COMPAN
- AREA NOT PRESENTLY SERVED BY WATER SERVICE
- PUBLIC SUPPLY WELLS
- WATER MAIN ACROSS HIGHWA FOR FUTURE USE
- SURFACE WATER INTAKE
- —W— MAJOR WATER MAINS

SEWAGE, LANDFILL

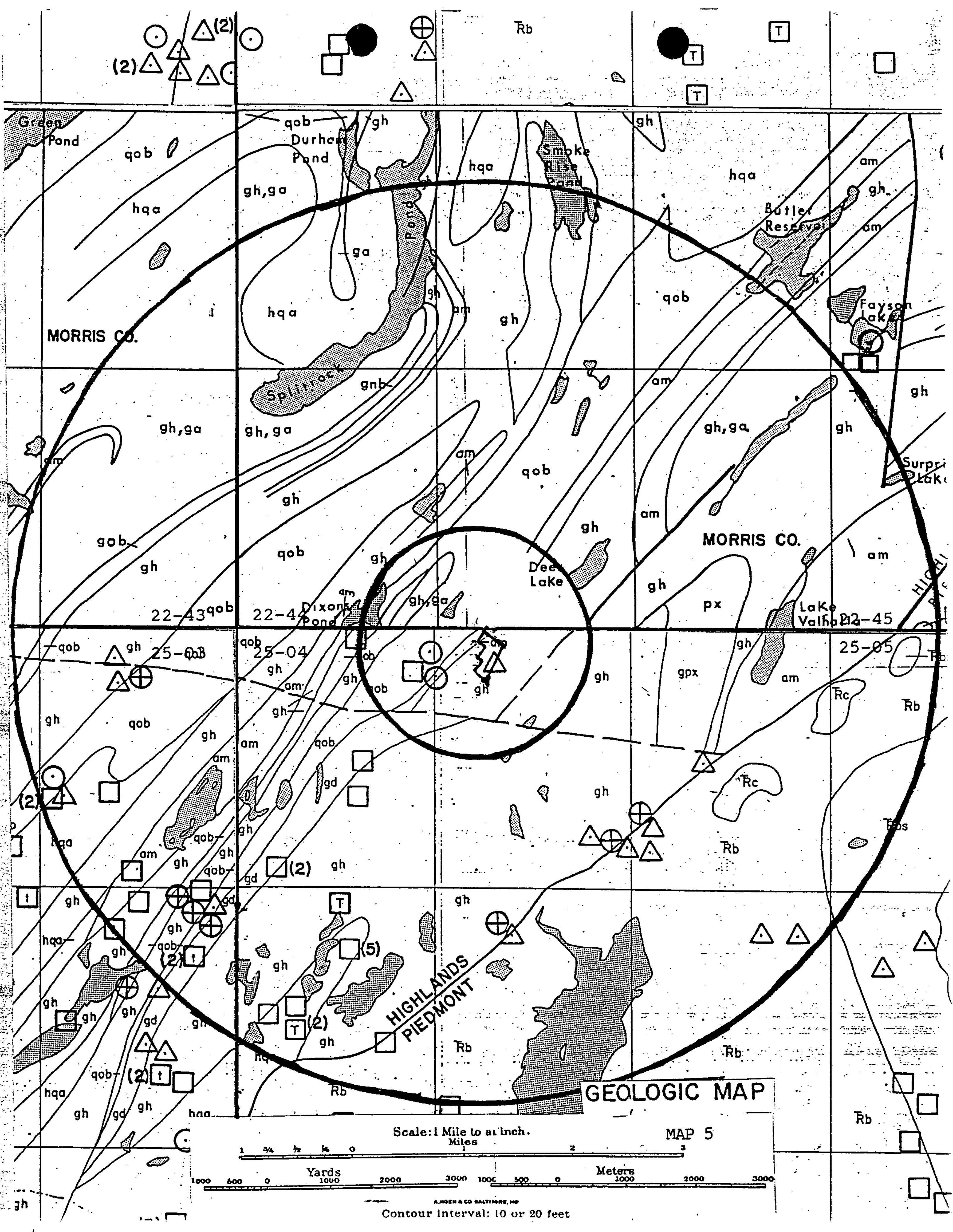
- AREA SERVED BY PUBLIC SEWAGE SERVICE
- AREA NOT PRESENTLY SERVED BY SEWAGE SERVICE
- SANITARY LANDFILLS
- SEWAGE TREATMENT PLANTS (CAPACITY $<$0.3mgd)
- SEWAGE TREATMENT PLANTS (CAPACITY $\geq$0.3mgd)
- —S— MAJOR SEWAGE TRANSMISSION LINES

DRAINAGE BASIN

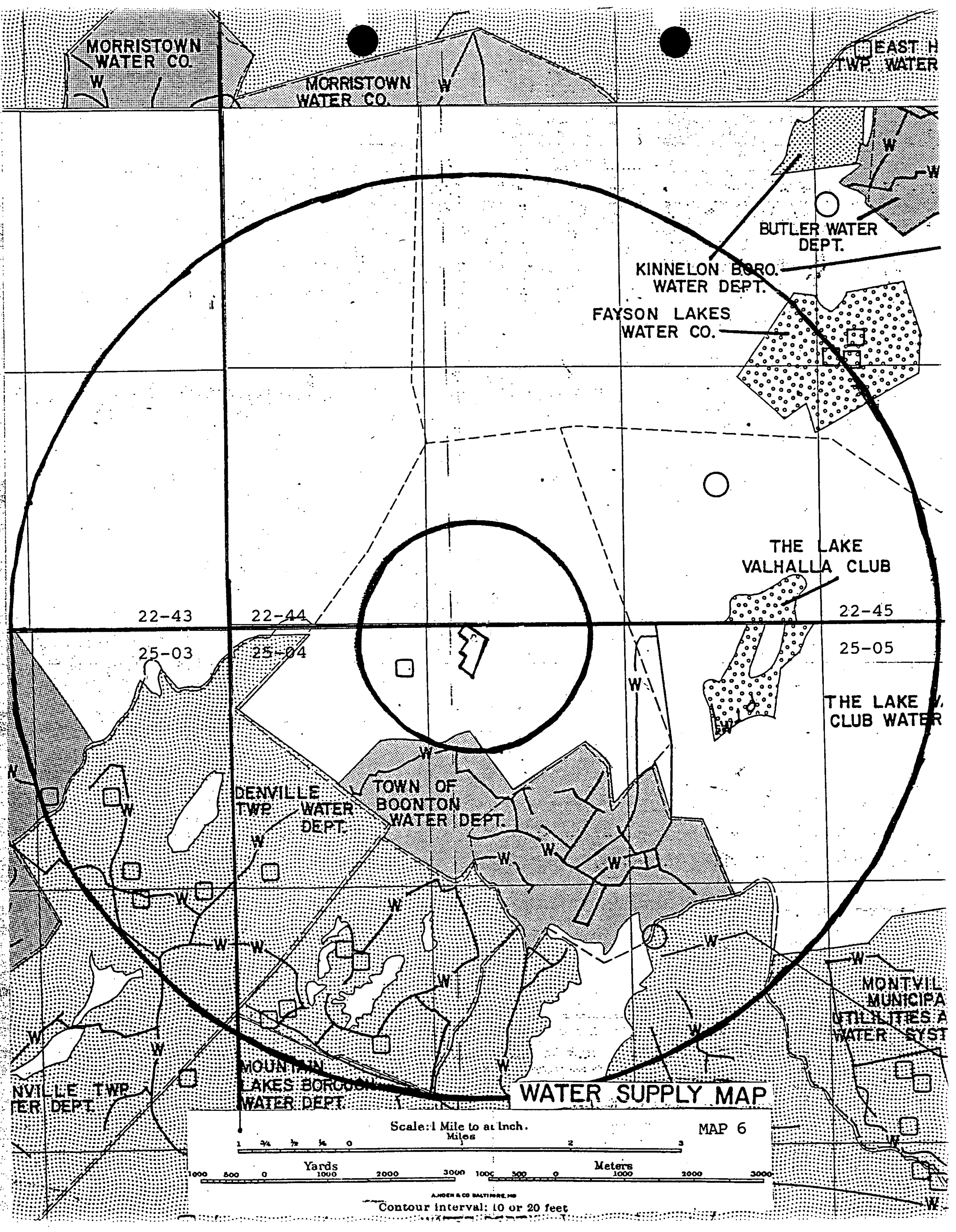
- DRAINAGE BASIN BOUNDARY
- RIVER BASIN BOUNDARY
- HUDSON DRAINAGE BASIN NAME
- STREAMS AND RIVERS
- FLOOD PRONE AREAS

POPULATION

- COUNTY BOUNDARY
- MUNICIPAL BOUNDARY
- ( ) POPULATION DENSITY IN PERSONS PER SQUARE MILE
- [ ] AREA IN SQUARE MILES
- % PERCENT AREA OF MUNICIPALITY ON BLOCK
- MARKET ROADS
- BUILT UP AREAS
- STATE BOUNDARY



Green Pond
Durham Pond
Smoke Rise Pond
Butler Reservoir
Fayson Lake
Splitrock Pond
MORRIS CO.
MORRIS CO.
Deer Lake
Dixons Pond
Lake Valhalla
Surprise Lake
22-43
22-44
22-45
25-03
25-04
25-05
HIGHLANDS
PIEDMONT
GEOLOGIC MAP
Scale: 1 Mile to an Inch.
MAP 5
Miles
Yards
Meters
Contour interval: 10 or 20 feet


MORRISTOWN WATER CO.
MORRISTOWN WATER CO.
EAST H TWP. WATER
BUTLER WATER DEPT.
KINNELON BORO. WATER DEPT.
FAYSON LAKES WATER CO.
THE LAKE VALHALLA CLUB
22-43
22-44
22-45
25-03
25-04
25-05
THE LAKE V CLUB WATER
DENVILLE TWP. WATER DEPT.
TOWN OF BOONTON WATER DEPT.
MONTVIL MUNICIPA UTILITIES A WATER SYST
MOUNTAIN LAKES BOROUGH WATER DEPT.
NVILLE TWP. TER DEPT.
WATER SUPPLY MAP
MAP 6
Scale: 1 Mile to an Inch.
Miles
Yards
Meters
A. HOEN & CO BALTIMORE, MD
Contour interval: 10 or 20 feet

A. Boonton, Dover

B. Delaware River-Musconetcong; Passaic-Pequannock, Rockaway

C. Water Quality Standards: (explained in Atlas Sheet description) FW2

D. Kanouse Sandstone (Dkn), Marcellus Formation (Dm), High Falls Formation (Shf), Decker Limestone and Longwood Shale (Sd), Green Pond Conglomerate (Sgp), hornblende granite and gneiss (gh), alaskite (ga), syenite (gs), amphibolite (am), pyroxene gneiss (gpx), hypersthene-quartz-andesine gneiss (hqa), quartz-oligoclase-biotite gneiss (qob)

E. 1. Physiographic Province: New England (Reading Prong)
Subdivision: N.J. Highlands
Major Topographic Features: Central Highland Plateau, German-Longwood Valley, Passaic Range
Elevations (ft.above sea level): ridges 1250, valleys 700
Relief (ft.): 550

2. a. Normal Year: 50"
Dry Year: 38"
Wet Year: 71"

b. January: 28°F
July: 72°F

c. 230 days. Last killing frost: 5/15; first killing frost: 10/20

3. Land Use Map available

F. Div. of Parks and Forestry:
Farny State Park
Municipal Watersheds:
Split Rock Pond
Longwood Lake

G. U.S. Army - Picatinny Arsenal

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
22-43-448	Picatinny Arsenal			82	400	Q
22-43-472	"			108	690	Єh
22-43-473	"			79	400	Q

J. Geodetic Control Survey monuments described in Index Maps 13,14; adjacent Index Map 8

A. Boonton, Pompton Plains

B. Passaic-Pequannock, Pompton, Rockaway

C. 1. Split Rock Pond - Non-recording precipitation gauge

2.

Map No.	Location	Period of Record
14	Beaver Brook at outlet of Split Rock Reservoir	1926-1946

Water Quality Standards: (explained in Atlas Sheet description) FW2

D. Brunswick Formation (Trb), Basalt Flows (Trbs), hornblende granite and gneiss (gh), alaskite (ga), amphibolite (am), hypersthene-quartz-endesine gneiss (hqa), quartz-oligoclase-biotite gneiss (qob), biotite-quartz-feldspar gneiss (qnb)

E. 1. Physiographic Province: New England (Reading Prong)
Subdivision: N.J. Highlands
Major Topographic Features: Passaic Range
Elevations (ft.above sea level): ridges 1100, valleys 600
Relief (ft.): 500

Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Red Sandstone Plain
Elevations (ft.above sea level): valleys 600

2. a. Normal Year: 47"
Dry Year: 37"
Wet Year: 66"

b. January: 29°F
July: 72°F

c. 235 days. Last killing frost: 5/10; first killing frost: 10/20

3. Land Use Map available

F. Div. of Parks and Forestry:
Farny State Park
Morris County:
Silas Condict Park
Municipal Watersheds:
Split Rock Pond
Butler Borough
Boonton Borough
Pequannock

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
22-45-126	Christian Recreation Assn.	1965	82	223	45	p€
22-45-178	Fayson Lakes	1965	48'5"	90	271	Q
22-45-178	"	1965	88'7"	120	0	"
22-45-178	"	1958	26'5-1/2"	50	435	"
22-45-468	Hartley Farm			582	5	p€
22-45-489	Montville Twp.M.U.A.	1974	203-243	243	771	Qsd
22-45-495	Kretschmer, Robert	1969	26	310	100	p€

J. Geodetic Control Survey monuments described in Index Map 14; adjacent Index Maps 8,9,13

A. Boonton, Dover, Mendham, Morristown

B. Passaic-Rockaway, Whippany

C. 3. Map No. Location Period of Record

Map No.	Location	Period of Record
256	Rockaway River at Dover (Rutgers St.)	1964

Water Quality Standards: (explained in Atlas Sheet descriptions) FW2

D. Brunswick Formation (Trb), hornblende granite with pyroxene granite (gh), quartz-plagioclase gneiss (gnq), pyroxene gneiss (px), amphibolite (am), biotite-quartz-feldspar gneiss (qnb)

E. 1. Physiographic Province: New England (Reading Prong)
Subdivision: N.J. Highlands
Major Topographic Features: Wisconsin Terminal Moraine, Rockaway River Valley, Green Pond Mountain
Elevations (ft.above sea level): ridges 1000; valleys 400
Relief (ft.): 600

2. a. Normal Year: 50"
Dry Year: 36"
Wet Year: 68"

b. January: 28°F
July: 72°F

c. 233 days. Last killing frost: 4/5; first killing frost: 10/15

3. a. Approximately 15% urban or suburban. Municipalities: Denville, Dover, Parsippany-Troy Hills, Randolph, and Rockaway
b. Dairying predominant. Poultry, corn, oats, and vegetables
c. Less than 10%. Oak predominant
d. Chemical, electrical, machinery, rubber, plastics, apparel, and paper
e. Sand and gravel. Magnetite iron ore has historically been important. Major inactive mines include: Teabo Mines (25-03-129), Mt.Hope Mine (25-03-133), Allen Mines (25-03-143), White Meadow Mines (25-03-234), Beach Glen Mine (25-03-321), Swedes Mine (25-03-438), Munson Mine (25-03-476)
f. I-80, U.S.46, U.S.202, N.J.53, N.J.10; Erie R.R.; Morris Canal (abandoned)

F. Jersey City:
Municipal Watershed
Morris County:
James Andrew Memorial Park

G. Picatinny Arsenal, U.S. Army

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
25-03-241	Boro of Rockaway			300	0	P€
25-03-246	White Meadows Water Co.			88	0	"
25-03-295	Boro of Rockaway	1974	78-93	93	455	Qtm
25-03-297	"	1962	63	82	517	px
25-03-325	Boonton Radio Corp.	1960	70	98	0	gng
25-03-321	"	1960	92-95	105	108	gh
25-03-324	"	1960	93'10"	125	548	"
25-03-347	Rockaway Twp.	1965		35	0	gng
25-03-347	"	1967		163'2"	548	"
25-03-347	Central Morris Ind. Park			153	300	Q
25-03-347	Boro of Rockaway			196	75	P€
25-03-357	Boro of Denville			147	1225	Q
25-03-388	Twp. of Denville	1958	20	96	500	px
25-03-417	Metal Hose & Tubing Co.	1963	11	53	300	"
23-03-445	Food Fair Stores Inc.	1957	11'10"	70	400	gh
23-03-445	Dover Shopping Center			97	144-	Q
25-03-453	Town of Dover	1960	79'11"	85		gnb
25-03-455	"	1960	115'6"	130'6"	383	"
25-03-461	"	1962	120	138	1455	gh
25-03-461	"	1962	126	150	566	"
25-03-523	Boro of Rockaway			72	210	Q
25-03-525	"			140	800	"
25-03-525	"	1961	103	139	500	px
25-03-526	"	1956		51		"
25-03-529	Radio Corp. of America	1956	57	400	27	"
25-03-533	Boro of Rockaway	1955	70	81	50	"
25-03-545	Austernal Milrocast			400	27	P€
25-03-545	"			136	221	Q
25-03-547	Austenal Laboratories	1954	40	50	400	px
25-03-552	Radio Corp. of America	1956	63	543	219	"
25-03-621	Denville	1961	178	201	1018	gh
25-03-622	Denville Twp.	1975	145-165	212	235	Qsd
25-03-624	Boro of Denville			205	-	Q
25-03-631	Denville Twp.	1975	168	180	0	P€
25-03-632	"	1975	138	140	0	"
25-03-632	St.Francis Sanatorium			126	75	"
25-03-632	H. Beherns			202	0	Q-P€
25-03-632	Crane, A.D. Co.			202	0	"
25-03-638	Boro of Denville			102	-	Q
25-03-638	"			85	-	"
25-03-645	Twp. of Denville	1967	48	72		gh
25-03-652	Crane, A.D. Co.			207	20	P€
25-03-653	Edward R. Garage			202	90	Q
25-03-659	N.J. Power & Light	1955	56'5"	75	225	gh
25-03-659	Advance Pressure Casting Co.	1959	78	87	78	"
25-03-683	Twp. of Denville	1960		97		"
25-03-683	Boro of Denville			125	-	Q
25-03-691	Parsippany-Troy Hills, Twp.of			36	75	"
25-03-697	Internatl.Pipe & Ceramics Corp.			180	0	"

25-03-937	Parsippany-Troy Hills, Twp.of			150	195	Q-PG
25-03-937	"			195	263	"
25-03-937	"			150	402	"
25-03-965	Warner Chilcott Laboratories	1957		143		px
25-03-966	"	1957		146		"
25-03-983	"			97	0	Q
25-03-986	Maltine Co.			174	130	"
25-03-986	"			135	115	"
25-03-992	Warner Chilcott Labs			75	500	"
25-03-992	"	1957	58	102	500	px
25-03-994	Warner Lambert Pharmaceutical	1960	87'2"	107'2"	518	"
25-03-994	Maltine Co.			130	70	Q
25-03-994	Warner Chilcott Labs			70	850	"
25-03-995	"	1957	76	108	1000	px
25-03-996	Chilcott Laboratories,Inc.	1954	100	100		"
25-03-996	Warner Chilcott Labs			93	0	Q

J. Geodetic Control Survey monuments described
Index Maps 13,14,19,26

BLOCK #25-04,05

A. Boonton, Caldwell, Morristown, Pompton Plains

B. Passaic-Pompton, Rockaway, Upper Passaic, Whippany

C. 1. Boonton - Non-recording temperature and precipitation gauges

2.

Map No.	Location	Period of Record
15	Rockaway River above Reservoir at Boonton	1937-
16	Rockaway River below Reservoir at Boonton	1903-1904, 1906-

3.

257	Rockaway River at Boonton (Rt.202)	1964-
259	Whippany River at Rockaway Neck	1965-
269	Rockaway River at Parsippany-Troy Hills (Rt.46)	1968-

Water Quality Standards: (explained in Atlas Sheet description) FW2

D. Brunswick Formation (Trb), Triassic Conglomerates (Trc), Basalt Flows (Trbs), diabase (Trdb), biotite-quartz-feldspar gneiss (qnb), hornblende granite with pyroxene granite (gh), quartz-plagioclase gneiss (gng), pyroxene gneiss (px)

E. 1. Physiographic Province: New England (Reading Prong)
Subdivision: N.J. Highlands
Major Topographic Features: Passaic Range
Elevations (ft.above sea level): ridges 850, valleys 150
Relief (ft.): 700

2. a. Normal Year: 47"
Dry Year: 34"
Wet Year: 61"

b. January: 29°F
July: 72°F

c. 235 days. Last killing frost: 5/5; first killing frost: 10/5

F. Div. of Parks and Forestry:
Great Piece Meadows
Troy Meadows Natural Area
Essex County:
West Essex Park
Morris County:
Tourne Park
Boonton Reservoir:
Municipal Watershed

H. Doremus House, Towaco

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
25-04-123	Montville Twp. M.U.A.	1973	249	252	120	Qsd
25-04-133	Town of Boonton			12	0	Q
25-04-136	"			113	100	"
25-04-136	"			64	0	"
25-04-156	Town of Boonton (Well point System)	1964		55	600	Qsd
25-04-159	Town of Boonton	1958	75	100	300	"
25-04-178	Boro of Mountain Lakes			50	200	Q
25-04-178	"			58	232	"
25-04-216	Air Craft Radio Corp.	1955	65	80	150	Qsd
25-04-295	Drew, E.F. & Co.			305	190	Q
25-04-296	"			110	100	"
25-04-296	"			402	100	"
25-04-354	S.B. Penick & Co.	1970	67	252	75	P€
25-04-371	Drew, E.F. & Co.			313	235	"
25-04-371	"			505	25	"
25-04-374	"			416	13	"
25-04-422	Boro of Mountain Lakes			186	–	Q-P€
25-04-429	Hillcrest Water Co.			469	140	P€
25-04-429	"			422	85	"
25-04-429	Boro of Mountain Lakes			58	589	Q
25-04-429	"			60	500	"
25-04-429	"			60	500	"
25-04-445	"	1969	260	333	1200	Qsd
25-04-446	"	1966	300	345	437	"
25-04-446	"			257	–	Q
25-04-446	"			137	–	"
25-04-467	"	1964	61	207	128	P€
25-04-489	International Pipe & Ceramics	1963	141	160	831	Qsd
25-04-489	U.S.G.S.			80	–	Q
25-04-489	"			81	–	"
25-04-497	International Pipe & Ceramics	1963	161	200	350	Qsd
25-04-524	Norda Essential Oil & Chem.Co.			822	38	P€
25-04-524	"			385	220	"
25-04-574	Parsippany-Troy Hills,Twp.of			179	100	Q
25-04-578	"	1958	105	138	600	Qsd
25-04-587	"			82	500	Q
25-04-587	"			150	150	"
25-04-596	"			85	–	"
25-04-598	"	1973	60-85	96	1100	Qsd
25-04-626	Knoll Golf Club			240	90	Trb
25-04-635	Charles Ackerman (for school)	1953	43	100	70	P€
25-04-674	Twp.of Parsippany-Troy Hills			107	–	Q
25-04-677	"			80	1000	"
25-04-723	"			169	100	Trb
25-04-771	Lwewellen Farms Restaurant			210	0	Q
25-04-785	Parsippany-Troy Hills Water Dept.	1975	114-134	172	620	Qsd
25-04-785	"	1974	89-109	112	453	"
25-04-793	"	1964	66	75	0	Trb

25-04-796	U.S.G.S.	1965		89	255	Trb
25-04-798	"	1966		84	500	"
25-04-813	Leeming-Pacquin	1967	65	80	430	Qsd
25-04-815	Parsippany-Troy Hills	1966	70	100	525	"
25-04-847	U.S.G.S.			79	-	Q
25-04-851	Twp.of Parsippany-Troy Hills			92	-	"
25-04-851	"	1958	55	65	715	Qsd
25-04-854	Sunran Corp.	1957	75	95	100	"
25-04-854	"	1957	52	81	300	"
25-04-951	Twp.of Parsippany-Troy Hills	1966	36	47	835	"
25-04-952	U.S.G.S.	1966	-	213	272	"
25-04-954	Rowe Manufacturing Co.	1955	74	86	400	"
25-04-957	Twp.of Parsippany-Troy Hills	1965	55	80	530	"
25-04-976	U.S.G.S.			52	-	Q
25-04-979	"			64	-	"
25-04-991	"			109	-	"
25-05-419	Montville Mun.Utilities	1966	19	293	106	Trb
25-05-425	John Pellock	1971	20	170	?	"
25-05-432	Forest Wood Const. Co.	1965	30	275	159	"
25-05-469	U.S.G.S.			173	-	Q
25-05-481	Montville Mun. Util.	1966	55	210	70	Trb
25-05-485	Pine Brook Water Co.	1956	15	300	190	"
25-05-487	Montville Mun. Util.	1966	34	176	87	"
25-05-725	Twp.of Parsippany-Troy Hills	1956	54	90	350	Qsd
25-05-725	"			70	900	Q
25-05-739	O'Dowd Dairies			530	77	Q-Trb
25-05-776	Twp. of East Hanover	1966	118	285	440	Trb

J. Geodetic Control Survey monuments described
Index Maps 14,20; adjacent Index Maps 13,19

● WELLS WITHIN A 4 MILE RADIUS OF THE SITE

WATER WITHDRAWAL POINTS AND NJGS CASE INDEX SITES WITHIN 5.0 MILES OF:

LATITUDE 405553
LONGITUDE 742535

DRAFT

SCALE: 1:63,360
(1 Inch = 1 Mile)

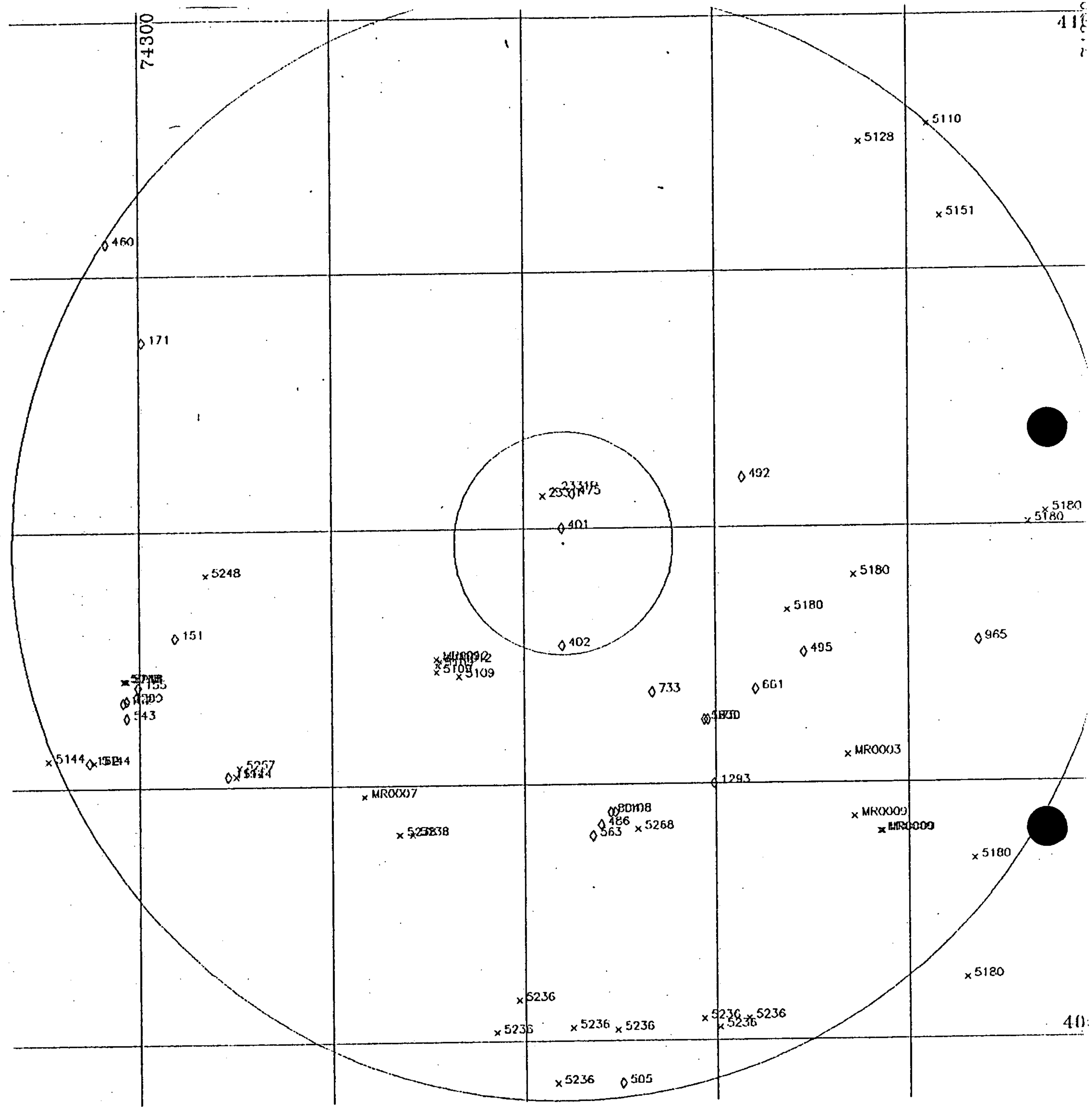
× WATER WITHDRAWAL POINTS
◊ NJGS CASE INDEX SITES
1 MILE AND 5 MILE RADII INDICATED

NJGS CASE INDEX DATA RETRIEVED FROM:
NEW JERSEY GEOLOGICAL SURVEY
ON 12/22/87

PLOT PRODUCED BY:
NJDEP
DIVISION OF WATER RESOURCES
BUREAU OF WATER ALLOCATION
CN-029
TRENTON, NJ 08625

DATE: 12/16/89

MAP 7



SUBJECT TO REVISION

RFL

Page 1 of NJGS CASE INDEX SITES WITHIN 5.0 MILES OF 405353 LAT. 742538 LON. AS OF 12/22/87 (IN ORDER BY DECREASING LONGITUDE) - 12/16/89

SITENUM	NAME	LAT	LON	DISTANCE	CONTAM	FMCODE1	FMCODE2	STATUS1	STATUS2
162	ROCKAWAY BOROUGH MUNICIPAL WELL(S), MORRIS CO.	405412	743031	4.7	05	120	130	1	F
460	RADIATION TECHNOLOGY. ROCKAWAY, MORRIS CO.	405815	743020	5.0	00	0120	9000	1	E
152	SHELL G.S., ROCKAWAY, MORRIS CO.	405440	743010	4.2	51	130	144	2	
238	TOWNE & COUNTRY GAS STATION. ROCKAWAY TWP.. MORRIS CO.	405441	743008	4.2	51	144	130	1	
543	GARDEN STATE TRANSIT, ROCKAWAY TWP., MORRIS CO.	405433	743008	4.3	1	0130	9000	1	
1279	CONSOLIDATED CHEMICALS, DENVILLE, MORRIS CO.	405441	743008	4.2	00	0120	3070	1	
155	ROCKAWAY TWP. WELL FIELD, MORRIS CO.	405447	743001	4.1	00	130	9000	1	E
171	LAKE TELEMARK GULF, ROCKAWAY TOWNSHIP. MORRIS CO.	405729	742958	4.3	51	9011	9080	2	J
151	JERRY JONES MACK, ROCKAWAY, MORRIS CO.	405510	742938	3.6	1	130	0	1	
1192	KUKAN RESIDENCE, DENVILLE. MORRIS CO.	405405	742705	3.7	53			3	
401	AIRCRAFT RADIO CORP. (ARC)-CESSNA COMPANY, BOONTON TWP., MORRIS COS C	405600	742536	0.1	1	130	0	9	
402	RADIO FREQUENCY LAB. (RFL) INC., BOONTON TWP., MORRIS CO.	405505	742536	0.9	1	130	0	9	
475	JOHANSON MFG. CO., BOONTON TWP. MORRIS CO.	405616	742529	0.4	1	130	0	9	
553	SYNTHATRON CORP., PARSIPPANY TROY HILLS TWP., MORRIS CO.	405336	742517	2.6	00	130	3070	1	
486	NORDA, PARSIPPANY TROY HILLS, MORRIS CO.	405341	742512	2.5	1	130	3070	1	
504	LYRO PRECISION PRODUCTS, INC, MOUNTAIN LAKES. MORRIS CO.	405347	742506	2.4	00	0120	0	1	B
1108	BOONTON COAL GAS, MORRIS CO.	405347	742503	2.5	70	0130	9000	1	E
505	BOONTON ELECTRONICS, PARSIPPANY, MORRIS CO.	405140	742459	4.9	00	130	3070	1	I
733	PEPE FIELD, BOONTON, MORRIS CO.	405443	742440	1.6	55	9020	0	1	E
583	DREW CHEMICAL, BOONTON, MORRIS CO.	405430	742407	2.0	35	9020	3070	8	
1230	DREW CHEMICAL, BOONTON, MORRIS CO.	405430	742407	2.0	00	9000		1	C
575	PACIFIC VEGETABLE OIL (PVO), BOONTON TOWNSHIP. MORRIS CO.	405430	742405	2.1	00	0110	0000	1	
1293	BOONTON HIGH SCHOOL, BOONTON, MORRIS CO.	405400	742401	2.6	63	0100	0000	F	C
492	MAROTTA SCIENTIFIC CONTROLS, MONTVILLE TWP., MORRIS CO.	405623	742343	1.7	00	130	9091	1	E
661	U.S. GYPSUM CO. INC., BOONTON, MORRIS CO.	405444	742335	2.2	35	120	9020	1	
495	FENICK CORP., MONTVILLE, MORRIS CO.	405501	742305	2.4	34	110	3070	0	
965	TOWACO SUNOCO, MINTVILLE. MORRIS CO.	405506	742117	3.9	0	0	0	3	

Number of Observations: 27

Page 1 of NJGS CASE INDEX SITES WITHIN 5.0 MILES OF 405553 LAT. 742535 LON. AS OF 12/22/87 (IN ORDER BY SITE NUMBER) - 12/16/87

SITENUM	NAME	LAT	LON	DISTANCE	CONTAM	FMCODE1	FMCODE2	STATUS1	STATUS2
151	JERRY JONES MACK, ROCKAWAY, MORRIS CO.	405510	742938	3.6	1	130	0	1	
152	SHELL S.S., ROCKAWAY. MORRIS CO.	405440	743010	4.2	51	130	144	2	
155	ROCKAWAY TWP. WELL FIELD, MORRIS CO.	405447	743001	4.1	00	130	9000	1	E
162	ROCKAWAY BOROUGH MUNICIPAL WELL(S), MORRIS CO.	405412	743031	4.7	05	120	130	1	F
171	LAKE TELEMARK GULF, ROCKAWAY TOWNSHIP, MORRIS CO.	405729	742958	4.3	51	9011	9050	2	J
238	TOWNE & COUNTRY GAS STATION. ROCKAWAY TWP., MORRIS CO.	405441	743008	4.2	51	144	130	1	
401	AIRCRAFT RADIO CORP. (ARC)-CESSNA COMPANY. BOONTON TWP., MORRIS COS C	405600	742536	0.1	1	130	0	9	
402	RADIO FREQUENCY LAB. (RFL) INC., BOONTON TWP., MORRIS CO.	405505	742536	0.9	1	130	0	9	
460	RADIATION TECHNOLOGY. ROCKAWAY, MORRIS CO.	405815	743020	5.0	00	0120	9000	1	E
475	JOHANSON MFG. CO., BOONTON TWP. MORRIS CO.	405616	742529	0.4	1	130	0	9	
486	NORDA, PARSIPPANY TROY HILLS, MORRIS CO.	405341	742512	2.5	1	130	3070	1	
492	MAROTTA SCIENTIFIC CONTROLS, MONTVILLE TWP.. MORRIS CO.	405623	742343	1.7	00	130	9091	1	E
495	FENICK CORP., MONTVILLE, MORRIS CO.	405501	742305	2.4	34	110	3070	0	
505	BOONTON ELECTRONICS, PARSIPPANY, MORRIS CO.	405140	742459	4.9	00	130	3070	1	I
543	GARDEN STATE TRANSIT, ROCKAWAY TWP., MORRIS CO.	405433	743008	4.3	1	0130	9000	1	
563	SYNTHATRON CORP., PARSIPPANY TROY HILLS TWP.. MORRIS CO.	405336	742517	2.6	00	130	3070	1	
575	PACIFIC VEGETABLE OIL (PVO), BOONTON TOWNSHIP, MORRIS CO.	405430	742405	2.1	00	0110	0000	1	
583	DREW CHEMICAL, BOONTON, MORRIS CO.	405430.	742407	2.0	35	9020	3070	8	
661	U.S. GYPSUM CO. INC., BOONTON, MORRIS CO.	405444	742335	2.2	35	120	9020	1	
733	PEPE FIELD, BOONTON, MORRIS CO.	405443	742440	1.6	55	9020	0	1	E
734	LYCO PRECISION PRODUCTS. INC, MOUNTAIN LAKES, MORRIS CO.	405347	742506	2.4	00	0120	0	1	B
765	TOWACO SUNOCO. MINTVILLE, MORRIS CO.	405506	742117	3.9	0	0	0	3	
1108	BOONTON COAL GAS, MORRIS CO.	405347	742503	2.5	70	0130	9000	1	E
1152	KUKAN RESIDENCE. DENVILLE, MORRIS CO.	405405	742905	3.7	53			3	
1230	DREW CHEMICAL, BOONTON, MORRIS CO.	405430	742407	2.0	00	9000		1	C
1293	BOONTON HIGH SCHOOL, BOONTON, MORRIS CO.	405400	742401	2.6	63	0100	0000	F	C
1295	CONSOLIDATED CHEMICALS, DENVILLE, MORRIS CO.	405441	743008	4.2	00	0120	3070	1	

Number of Observations: 27

 PRELIMINARY SURVEY OF WATER WITHDRAWAL POINTS WITHIN 5.0 MILES OF 405533 LAT. 742535 LON. (IN ORDER BY DECREASING LONGITUDE) - 12/16/89

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
5144	ROCKAWAY BOROUGH WATER DEPT.	2510403	5	405413	743056	S	5.1	27	35	92	GQSD		517
5144	ROCKAWAY BOROUGH WATER DEPT.	2518231	6	405412	743028	S	4.7	27	35	83	GQSD		800
5248	ROCKAWAY TOWNSHIP WATER DEPT.	2515364	7	405450	743010	F	4.2	27	35	153	GQSD		830
5248	ROCKAWAY TOWNSHIP WATER DEPT.	2514324	6	405450	743009	F	4.2	27	35	163	GQSD		450
5249	ROCKAWAY TOWNSHIP WATER DEPT.	4500037	4	405450	743008	F	4.2	27	35	150	GQSD		175
5248	ROCKAWAY TOWNSHIP WATER DEPT.	2509626	1	405539	742919	S	3.3	27	35	125	GQSD		535
5144	ROCKAWAY BOROUGH WATER DEPT.	4500348	1	405405	742900	S	3.6	27	35	52	GQSD		525
5257	DENVILLE TOWNSHIP WATER DEPT.	4500324	1	405409	742853	U	3.6	27	08	146	GQTM		450
5257	DENVILLE TOWNSHIP WATER DEPT.	2505142	4	405409	742832		3.6	27	08	116	GQTM		550
MR0007	TOURNE VALLEY FARM	ROCKAWAY RIVER	STREAM 1	405355	742740	F	2.9	27	08		SPROC		750
5238	MOUNTAIN LAKES BOROUGH	4500302	4 TOWER H	405337	742718		3.0	27	25	463	GQSD		300
5238	MOUNTAIN LAKES BOROUGH	2514678	5	405337	742718	U	3.0	27	25	333	GQSD		1000
5238	MOUNTAIN LAKES BOROUGH	4500300	3	405337	742710	U	2.9	27	25	64	GQSD		400
5238	MOUNTAIN LAKES BOROUGH	4500301	4 TOWPATH	405337	742710	U	2.9	27	25	64	GQSD		400
5109	BOONTON, TOWN OF	4500295	2	405453	742655		1.6	27	01	38	GQSD		350
MR0012	HAMILTON, HENRY	ROCKAWAY RIVER	POND 1	405459	742655	F	1.6	27	01	20	SPROC	GPOSN	90
5109	BOONTON, TOWN OF	4500294	1	405456	742654		1.6	27	01	43	GQSD		350
MR0012	HAMILTON, HENRY	ROCKAWAY RIVER	STREAM 1	405458	742653	F	1.5	27	01		SPROC		90
5109	BOONTON, TOWN OF	2512046	6	405459	742650		1.5	27	01	55	GQSD		1000
5109	BOONTON, TOWN OF	2507495	5	405451	742641		1.5	27	01	106	GQSD		375
5236	PARSIPPANY-TROY HILLS	2511628	10	405204	742618	F	4.4	27	29	129	GQSD		500
5236	PARSIPPANY-TROY HILLS	2518850	18	405219	742604	F	4.1	27	29	127	GQSD		750
2331P	CESSNA AIRCRAFT CORPORATION	2224004	RW 2	405615	742548	F	0.5	27	01	88	GQSD		100
2331P	CESSNA AIRCRAFT CORPORATION	2224005	RW 3	405615	742548	F	0.5	27	01	89.5	GQSD		100
2331P	CESSNA AIRCRAFT CORPORATION	2224006	RW 4	405615	742548	F	0.5	27	01	90	GQSD		100
2331P	CESSNA AIRCRAFT CORPORATION	2223998	IW-1	405615	742549	F	0.5	27	01	89	GQSD		0
2331P	CESSNA AIRCRAFT CORPORATION	2223999	IW-2	405615	742548	F	0.5	27	01	91	GQSD		0
2331P	CESSNA AIRCRAFT CORPORATION	2224000	IW-3	405615	742548	F	0.5	27	01	90	GQSD		0
2331P	CESSNA AIRCRAFT CORPORATION	2224001	IW-4	405615	742548	F	0.5	27	01	82	GQSD		0
2331P	CESSNA AIRCRAFT CORPORATION	2224002	IW-5	405615	742549	F	0.5	27	01	86	GQSD		0
2331P	CESSNA AIRCRAFT CORPORATION	2224003	IW-6	405615	742548	F	0.5	27	01	89	GQSD		0
2331P	CESSNA AIRCRAFT CORPORATION	2222717	RW 1	405618	742540	F	0.5	27	01	50	GQSD		100
5236	PARSIPPANY-TROY HILLS	2512719	12	405140	742540	F	4.8	27	29	100	GQSD		300
5236	PARSIPPANY-TROY HILLS	2507381	1A	405206	742530	F	4.3	27	29	138	GQSD		420
5236	PARSIPPANY-TROY HILLS	4500033	4	405205	742502	F	4.4	27	29	92	GQSD		225
5236	PARSIPPANY-TROY HILLS	2507545	4A	405205	742502	F	4.4	27	29	150	GQSD		500
5268	JERSEY CITY DEPT. OF WATER	BOONTON	RESERVOIR	405339	742449		2.6	27	01		SPROC		
5236	PARSIPPANY-TROY HILLS	2511627	9	405210	742408	F	4.5	27	29	80	GQSD		540
5236	PARSIPPANY-TROY HILLS	4500032	3	405206	742358	F	4.6	27	29	75	GQSD		350
5236	PARSIPPANY-TROY HILLS	2518849	17	405210	742340	F	4.6	27	29	139	GQSD		700
5180	MONTVILLE TOWNSHIP MUA	2513895	5	405521	742315	F	2.1	27	21	293	GTRBS		100
MR0003	CONKLIN FARM	ROCKAWAY RIVER	STREAM 1	405413	742238	F	3.2	27	21		SPROC		120
5180	MONTVILLE TOWNSHIP MUA	2513301	8	405537	742234	F	2.7	27	21	112	GTRBS		40
MR0009	CONDURSOS RIVER FRONT FARM	ROCKAWAY RIVER	STREAM 1	405344	742234	F	3.6	27	21		SPROC		100
5128	BUTLER BOROUGH	KIKEOUT RESERV	RESERVOIR	405900	742230		4.5	27	03		SPFNK		
MR0009	CONDURSOS RIVER FRONT FARM	CROOKED BROOK	POND 1	405337	742219	T	3.9	27	21	12	SPROC	GTRB	100
MR0009	CONDURSOS RIVER FRONT FARM	CROOKED BROOK	STREAM 1	405337	742217	F	3.9	27	21		SPROC		100
5110	BOONTON, TOWN OF, WATER DEPT.	STONY BROOK	RESERVOIR	405908	742148		5.0	27	21	50	SP		150
5151	FAYSON LAKE WATER COMPANY	2203608	3	405825	742140	T	4.5	27	15	50	GPC		240
5151	FAYSON LAKE WATER COMPANY	2207045	4	405825	742140	T	4.5	27	15	90	GPC		125
5151	FAYSON LAKE WATER COMPANY	2214633	5	405825	742140	T	4.5	27	15	95	GPC		200
5180	MONTVILLE TOWNSHIP MUA	2503687	2/WALNUT	405228	742125	F	5.4	27	21	290	GTRBS		125
5180	MONTVILLE TOWNSHIP MUA	2512349	4	405324	742120	F	4.7	27	21	300	GTRBS		57
5180	MONTVILLE TOWNSHIP MUA	2213923	10/INDIAN2	405601	742046		4.2	27	21	243	GQSD		750
5180	MONTVILLE TOWNSHIP MUA	2213497	9/INDIAN1	405601	742046		4.2	27	21	242	GQSD		1000
5180	MONTVILLE TOWNSHIP MUA	2222499	11/INDIAN3	405606	742035		4.4	27	21	250	GPC		

Page 1 of PRELIMINARY SURVEY OF WATER WITHDRAWAL POINTS WITHIN 5.0 MILES OF 405353 LAT. 742535 LON. (IN ORDER BY PERMIT NUMBER) - 12/16/89

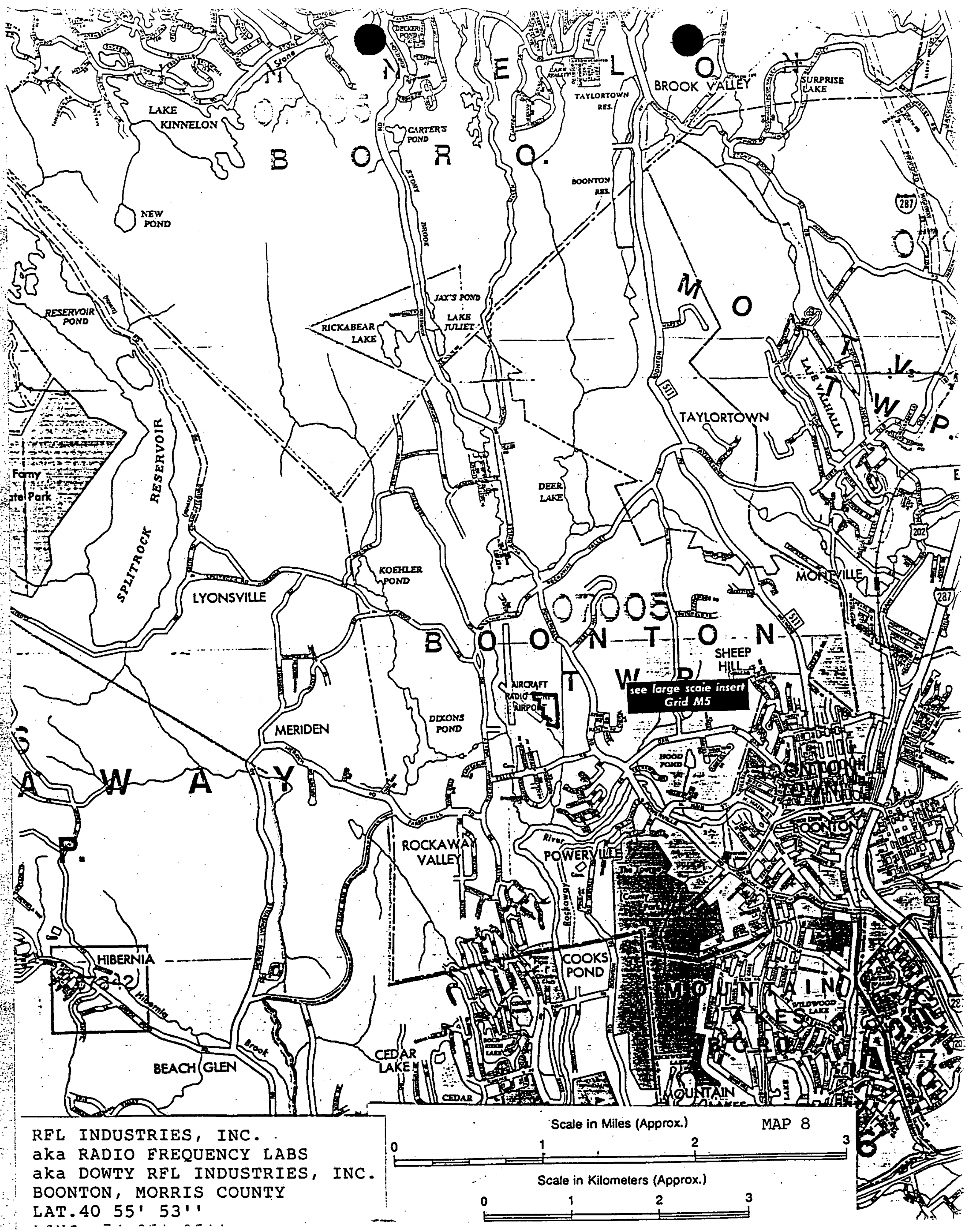
NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
2331P	CESSNA AIRCRAFT CORPORATION	2222717	RW 1	405618	742540	F	0.5	27	01	50	GQSD		100
	CESSNA AIRCRAFT CORPORATION	2224004	RW 2	405615	742548	F	0.5	27	01	88	GQSD		100
	CESSNA AIRCRAFT CORPORATION	2224005	RW 3	405615	742548	F	0.5	27	01	89.5	GQSD		100
	CESSNA AIRCRAFT CORPORATION	2224006	RW 4	405615	742548	F	0.5	27	01	90	GQSD		100
	CESSNA AIRCRAFT CORPORATION	2223998	IW-1	405615	742548	F	0.5	27	01	89	GQSD		0
	CESSNA AIRCRAFT CORPORATION	2223999	IW-2	405615	742548	F	0.5	27	01	91	GQSD		0
	CESSNA AIRCRAFT CORPORATION	2224000	IW-3	405615	742548	F	0.5	27	01	90	GQSD		0
	CESSNA AIRCRAFT CORPORATION	2224001	IW-4	405615	742548	F	0.5	27	01	82	GQSD		0
	CESSNA AIRCRAFT CORPORATION	2224002	IW-5	405615	742548	F	0.5	27	01	86	GQSD		0
	CESSNA AIRCRAFT CORPORATION	2224003	IW-6	405615	742548	F	0.5	27	01	89	GQSD		0
5109	BOONTON, TOWN OF	4500284	1	405456	742654		1.6	27	01	43	GQSD		350
	BOONTON, TOWN OF	4500285	2	405453	742655		1.6	27	01	38	GQSD		350
	BOONTON, TOWN OF	2507495	5	405451	742641		1.5	27	01	106	GQSD		375
	BOONTON, TOWN OF	2512046	6	405459	742650		1.5	27	01	55	GQSD		1000
5110	BOONTON. TOWN OF, WATER DEPT.	STONY BROOK	RESERVOIR	405908	742148		5.0	27	21	50	SP		150
5128	BUTLER BOROUGH	KIMEOUT RESERV	RESERVOIR	405900	742220		4.5	27	03		SPPNK		
5144	ROCKAWAY BOROUGH WATER DEPT.	2510403	5	405413	743056	S	5.1	27	35	82	GQSD		517
	ROCKAWAY BOROUGH WATER DEPT.	2518231	6	405412	743028	S	4.7	27	35	83	GQSD		800
	ROCKAWAY BOROUGH WATER DEPT.	4500348	1	405405	742900	S	3.6	27	35	52	GQSD		525
5151	FAYSON LAKE WATER COMPANY	2203602	3	405825	742140	T	4.5	27	15	50	GPC		240
	FAYSON LAKE WATER COMPANY	2207045	4	405825	742140	T	4.5	27	15	90	GPC		125
	FAYSON LAKE WATER COMPANY	2214633	5	405825	742140	T	4.5	27	15	95	GPC		200
5190	MONTVILLE TOWNSHIP MUA	2503697	2/WALNUT	405228	742125	F	5.4	27	21	290	GTRBS		125
	MONTVILLE TOWNSHIP MUA	2512349	4	405324	742120	F	4.7	27	21	300	GTRBS		57
	MONTVILLE TOWNSHIP MUA	2513895	5	405521	742315	F	2.1	27	21	293	GTRBS		100
	MONTVILLE TOWNSHIP MUA	2222499	11/INDIAN3	405606	742035		4.4	27	21	250	GPC		
	MONTVILLE TOWNSHIP MUA	2213923	10/INDIAN2	405601	742046		4.2	27	21	243	GQSD		750
	MONTVILLE TOWNSHIP MUA	2213497	9/INDIAN1	405601	742046		4.2	27	21	242	GQSD		1000
	MONTVILLE TOWNSHIP MUA	2513301	8	405537	742234	F	2.7	27	21	112	GTRBS		40
5236	PARSIPPANY-TROY HILLS	2507381	1A	405206	742530	F	4.3	27	29	138	GQSD		420
	PARSIPPANY-TROY HILLS	4500032	3	405206	742358	F	4.6	27	29	75	GQSD		350
	PARSIPPANY-TROY HILLS	4500033	4	405205	742502	F	4.4	27	29	82	GQSD		225
	PARSIPPANY-TROY HILLS	2507545	4A	405205	742502	F	4.4	27	29	150	GQSD		900
	PARSIPPANY-TROY HILLS	2511627	9	405210	742408	F	4.5	27	29	80	GQSD		540
	PARSIPPANY-TROY HILLS	2511638	10	405204	742618	F	4.4	27	29	129	GQSD		500
	PARSIPPANY-TROY HILLS	2512718	12	405140	742540	F	4.8	27	29	100	GQSD		300
	PARSIPPANY-TROY HILLS	2518849	17	405210	742340	F	4.6	27	29	139	GQSD		700
	PARSIPPANY-TROY HILLS	2518850	19	405219	742604	F	4.1	27	29	127	GQSD		750
5238	MOUNTAIN LAKES BOROUGH	4500300	3	405337	742710	U	2.9	27	25	64	GQSD		400
	MOUNTAIN LAKES BOROUGH	4500301	4 TOWPATH	405337	742710	U	2.9	27	25	64	GQSD		400
	MOUNTAIN LAKES BOROUGH	4500302	4 TOWER H	405337	742718		3.0	27	25	463	GQSD		300
	MOUNTAIN LAKES BOROUGH	2514678	5	405337	742718	U	3.0	27	25	333	GQSD		1000
5248	ROCKAWAY TOWNSHIP WATER DEPT.	2509626	1	405339	742919	S	3.3	27	35	125	GQSD		535
	ROCKAWAY TOWNSHIP WATER DEPT.	4500037	4	405450	743008	F	4.2	27	35	150	GQSD		175
	ROCKAWAY TOWNSHIP WATER DEPT.	2514324	6	405450	743009	F	4.2	27	35	163	GQSD		450
	ROCKAWAY TOWNSHIP WATER DEPT.	2515364	7	405450	743010	F	4.2	27	35	153	GQSD		530
5257	DENVILLE TOWNSHIP WATER DEPT.	4500324	1	405409	742858	U	3.6	27	08	146	GQTM		450
	DENVILLE TOWNSHIP WATER DEPT.	2505142	4	405409	742858		3.6	27	08	116	GQTM		550
5268	JERSEY CITY DEPT. OF WATER	BOONTON	RESERVOIR	405339	742449		2.6	27	01		SPROC		
MR0003	CONKLIN FARM	ROCKAWAY RIVER	STREAM 1	405413	742238	F	3.2	27	21		SPROC		120
MR0007	TOURNE VALLEY FARM	ROCKAWAY RIVER	STREAM 1	405355	742740	F	2.9	27	08		SPROC		750
MR0009	CONDURSOS RIVER FRONT FARM	ROCKAWAY RIVER	STREAM 1	405344	742234	F	3.6	27	21		SPROC		100
	CONDURSOS RIVER FRONT FARM	CROOKED BROOK	POND 1	405337	742218	T	3.9	27	21	12	SPROC	GTRB	100
	CONDURSOS RIVER FRONT FARM	CROOKED BROOK	STREAM 1	405337	742217	F	3.9	27	21		SPROC		100
MR0012	HAMILTON, HENRY	ROCKAWAY RIVER	STREAM 1	405458	742653	F	1.5	27	01		SPROC		90

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
	HAMILTON, HENRY	ROCKAWAY RIVER	POND 1	405459	742655	F	1.6	27	01	20	SPROC	GPCGN	90

Number of Observations: 56

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY

Number of Observations: 56



RFL INDUSTRIES, INC.
aka RADIO FREQUENCY LABS
aka DOWTY RFL INDUSTRIES, INC.
BOONTON, MORRIS COUNTY
LAT.40 55' 53''

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
Trenton, N.J. 08625-0029

Jorge H. Berkowitz, Ph.D.
Acting Director

(609) 292-1637
Fax # (609) 984-7938

<u>CERTIFIED MAIL</u>
<u>RETURN RECEIPT REQUESTED</u>

JUL 6 1990

Mr. Jack Slater
Dowty RFL Industries, Inc.
Powerville Road
Boonton, NJ 07005

RE: Request to Terminate NJPDES permit No. NJ0099104

Dear Mr. Slater:

The Department has received a letter from your consultants (First Environment) requesting termination of your NJPDES Discharge to Ground Water permit (#NJ0099104). Please be informed that the Department requires four consecutive sampling results indicating no detectable contamination before permit termination can be considered. In addition, Table 2 of this letter does not indicate that 5 ppb of Trichloroethylene were detected in the sample from well #2 taken on October 6, 1988 (as page 21 of the laboratory results forms indicates, but the NJPDES reporting forms do not). Therefore, the Department considers Dowty-RFL to have two consecutive sampling events without detectable contamination, at this time.

Furthermore, because less frequent sampling over a longer period of time would be more protective of human health and the environment for this case where the objective is to observe the behavior of very low levels of contamination through time, the Department will allow that future monitoring may be conducted on an semi-annual rather than quarterly basis. Thus, semi-annual monitoring shall continue until a total of four consecutive sampling events (possibly including quarterly and semi-annual results) report no detectable contamination. A permit termination request may then be submitted.

If you have any questions please contact Henry Schuver at (609) 292-8427.

Sincerely,

Irene S. Kropp

Irene Kropp, Chief
Bureau of Ground Water Pollution
Abatement

WQM239
RCRA(LD)

ATTACHMENT A

FIRST ENVIRONMENT

Riverdale Road
Riverdale, New Jersey 07457
(201) 616-9700 • FAX (201) 616-1930

RECEIVED

JUN 23 1989

~~Dept. Environmental~~ Protection
Division of Water Resources
Ground Water Quality Control

June 22, 1989

Mr. Henry Schuver
Groundwater Quality Control Section
Water Quality Management Element
Division of Water Resources
New Jersey Department of Environmental Protection
CN-029
Trenton, New Jersey 08625

Re: Request to terminate Dowty RFL Industries
NJPDES permit # NJ0099104

Dear Mr. Schuver:

The requirements of the Dowty-RFL Industries NJPDES permit # 0099104, as renewed in March 1988, involve sampling two remaining monitoring wells, MW-1 and MW-2, and one surface water point, downstream along Valley Road (DSVR), for volatile organics analysis. Monitoring well MW-1 is hydraulically upgradient of the former infiltration/percolation lagoon and MW-2 is hydraulically downgradient of the lagoon. The DSVR sampling point is located where the surface stream, previously draining the lagoon, crosses Valley Road.

The analytical results from water samples collected at these locations over the last 3 consecutive sampling episodes, summarized in Tables 1 through 5 have been undetected for trichloroethylene and 1,1-dichloroethane. Although analysis of the samples did identify methylene chloride and toluene at estimated concentrations ranging from 2 to 10 parts per billion, these compounds were also detected in the corresponding laboratory method blanks indicating that the results are attributable to laboratory contamination. ~~No other volatile organic compounds were detected.~~ Based on these results, Dowty-RFL Industries is requesting to terminate NJPDES Permit #0099104, discontinue monitoring of ground and surface waters, and abandon wells MW-1 and MW-2 in accordance with NJSA58:4A et seq. (Subchapter 9).

169:1916

ATTACHMENT B1

Should you have any questions concerning Dowty-RFL Industries' request, please contact me. Your prompt attention to this matter would be greatly appreciated.

Sincerely,

FIRST ENVIRONMENT

Steffi A. Minnis
Hydrogeologist

SAM/csf

cc: Jack Slater, Dowty-RFL
B. T. Delaney, Ph.D., P.E.

Ba

FIRST ENVIRONMENT

TABLE 1

GROUNDWATER SAMPLING RESULTS
WELL MW-1

PARAMETER	SAMPLING EPISODE 04/06/8~~8~~ 9	01/27/89	10/06/88
Methylene chloride	u	u	3*
1,1-dichloroethane	u	u	u
Trichloroethylene	u	u	u
Toluene	u	u	2*

NOTES:

* Analyte was found in the method blank as well as the sample indicating laboratory contamination.

u = undetected

169:1916a.

B3

TABLE 2

GROUNDWATER SAMPLING RESULTS
WELL MW-2

PARAMETER	SAMPLING EPISODE 04/06/8~~8~~9	01/27/89	10/06/88	7/12/88	4/6/88
Methylene chloride	u	~~u~~ 2* J*	3*		
1,1-dichloroethane	u	u	u		7
Trichloroethylene	u	u	~~u~~ 5	6	7
Toluene	u	u	2*		

files check shows

NOTES:

* Analyte was found in the method blank as well as the sample indicating laboratory contamination.

u = undetected

169:1916a.

B4

TABLE 3

GROUNDWATER SAMPLING RESULTS
DOWNSTREAM VALLEY ROAD

PARAMETER	SAMPLING EPISODE 04/06/88	01/27/89	10/06/88
Methylene chloride	u	5*	3*
1,1-dichloroethane	u	u	u
Trichloroethylene	u	u	u
Toluene	u	u	2*

NOTES:

* Analyte was found in the method blank as well as the sample indicating laboratory contamination.

u = undetected

169:1916a.

B5

TABLE 4

GROUNDWATER SAMPLING RESULTS
FIELD BLANKS

PARAMETER	SAMPLING EPISODE 04/06/88	01/27/89	10/06/88
Methylene chloride	u	3*	3*
1,1-dichloroethane	u	u	u
Trichloroethylene	u	u	u
Toluene	u	u	8*

NOTES:

* Analyte was found in the method blank as well as the sample indicating laboratory contamination.

u = undetected

169:1916a.

B6

TABLE 5

SAMPLING RESULTS
TRIP BLANKS

PARAMETER	SAMPLING EPISODE 04/06/88	01/27/89	10/06/88
Methylene chloride	u	9*	3*
1,1-dichloroethane	u	u	u
Trichloroethylene	u	u	u
Toluene	u	u	8*

NOTES:

* Analyte was found in the method blank as well as the sample indicating laboratory contamination.

u = undetected

169:1916a.

B7

Form DWM-029
3/84

DIVISION OF WASTE MANAGEMENT

u - 17-02-01

INSPECTION REPORT

REPORT PREPARED FOR:

- [x] Generator
- [ ] Transporter
- [x] HWM (TSD) Facility

FACILITY INFORMATION

Name: Drutz RFL Industries Inc

Address: Powerville Rd
Boonton Twp NJ

Lot: 20 Block: 12

County: Morris

Phone: 334-3100

EPA ID#: NJD002156677

Date of Inspection: 11/17/87

PARTICIPATING PERSONNEL

State or EPA Personnel: Carolyn Seifried NJDEP-DHWM

Facility Personnel: Mr. Slater - Facilities Manager

Report Prepared by Name: Carolyn Seifried

Region: Northern

Telephone#: 201-299-7573

Reviewed by: [illegible]

Date of Review: 2/29/88

ATTACHMENT G

FACILITY NAME: Dewty RFL Industries Inc

ADDRESS: Parsippany Rd

Boonton Twp NJ

TIME IN: 10^10

COUNTY: Morris

TIME OUT: 12^10

EPA ID : NJD002156677

DATE OF INSPECTION:

PHOTOS TAKEN ☐ YES ☒ NO

If yes, how many?

SAMPLE TAKEN ☐ YES ☒ NO NO. OF SAMPLES

NJDEP ID #

MANIFESTS REVIEWED ☒ YES ☐ NO

Number of manifests in compliance 5

Number of manifests not in compliance 0

List manifest document numbers of those manifests not in compliance.

C2

SUMMARY OF FINDINGS

FACILITY DESCRIPTION AND OPERATIONS

Dowty RFL Industries Inc is an electronics company which assembles a variety of electronic equipment on a contract basis. The company has been at this site since 1922 but operations have changed significantly over the past five years and since the last inspection. (See Jan 31, 1986 inspection report file # 14-02-01). RFL now buys circuit boards and sends out to job shops parts for metal finishing and painting.

PROCESS: Premade components are loaded onto the circuit board. The components which can be flow soldered go across flux then through wave solder machine. They are then water rinsed, dried and the leads are cut off. In the case of components which cannot be put through the wave solder machine the components are inserted and hand soldered then cleaned in "Genesolve" degreaser.

WASTES: Waste flow solder flux is generated by the wave solder machine. The waste is collected in a 5 gal container and then is transferred to 55 gal drums. The "Genesolve" degreaser serves is in place of a freon degreaser. The degreaser unit has a cleaning system within the circulating system. No waste sludge has been generated yet since the units were put into use in Jan or Feb 1987.

C3

SUMMARY OF FINDINGS

FACILITY DESCRIPTION AND OPERATIONS

SUMMARY: The site inspection revealed generator only operations. Drums were labeled with accumulation start dates. The lagoon which has been emptied, filled and has grass growing on it was done in accordance with the approved closure plan. See attached letter March 7, 1986 DEP-DWR Water Quality Management to Douty RFL.

CONFIDENTIAL – RECOMMENDATION

File #14-02-01

Confidential

TO: File

FROM: Carolyn Seifried

DATE: 11/17/87

SUBJECT: RFL Industries Inc Boonton Twp

RFL Industries is acting as a generator only although they still have an EPA status as a TSDF. The TSD status is due to a lagoon which has been closed according to the approved closure plan.

EPA had been out approximately one month prior to my inspection. From questioning the facility representative it seems EPA did a RCRA inspection and learned the history of the site. They were unaware of the changes which have occurred on the site.

The facility should be delisted from TSD status to generator only on the EPA printout

C5

Form DWM-029
3/84

NEW JERS DEPARTMENT OF ENVIRONMENTAL PR CTION
DIVISION OF WASTE MANAGEMENT

INSPECTION REPORT

REPORT PREPARED FOR:

☒ Generator

☐ Transporter

☐ HWM (TSD) Facility

FACILITY INFORMATION

Name: DOWTY RFL Industries

Address: Powerville Road
Boonton, New Jersey

Lot: ______ Block: ______

County: ______

Phone: (201) 334-3100

EPA ID#: NJD002156677

Date of Inspection: September 29, 1987

PARTICIPATING PERSONNEL

State or EPA Personnel: SAMUEL I. EZEKWO
Environmental Engineer

Facility Personnel: JACK SLATER
Facilities Manager

Report Prepared by Name: SAMUEL I. EZEKWO

Region: EPA - Region II

Telephone #: (212) 264-5858

Reviewed by: ______

Date of Review: ______

C6

FACILITY NAME: DOWTY RFL Industries

ADDRESS: Powerville Road

Boonton, N.J.

TIME IN: ______

TIME OUT: ______

COUNTY: ______

EPA ID : NJD002156677

DATE OF INSPECTION: September 29, 1987

PHOTOS TAKEN ☐ YES ☒ NO

If yes, how many? ______

SAMPLE TAKEN ☐ YES ☒ NO NO. OF SAMPLES ______

NJDEP ID # ______

MANIFESTS REVIEWED ☐ YES ☐ NO

Number of manifests in compliance 20

Number of manifests not in compliance 0

List manifest document numbers of those manifests not in compliance.

C7

CONFIDENTIAL — RECOMMENDATIONS

TO: JOEL GOLUMBEK

FROM: SAMUEL I. EZEKWO

DATE:

SUBJECT: Dowty - RFL Industries

This inspection confirms that RFL operation has changed significantly from the previous years. As a result very small quantity of hazardous waste is being generated monthly.
RFL has requested to be delisted as a TSD facility and is waiting for DEP's approval.

No violation was found during the inspection

C8

SUMMARY OF FINDINGS

FACILITY DESCRIPTION AND OPERATIONS

RFL manufactures electronic components for communication devices such as detection relay devices for utilities. The operation included plating, metal finishing and printed circuit boards. The plating operation ended in 1980 and was moved to RFL's Newton facility. The metal finishing operation was eliminated in 1985, due to excessive cost of waste management in an on-site treatment surface impoundment and drums.

Presently only soldering operation associated with circuit boards manufacture is conducted on-site. All relevant electronic parts/components are purchased from outside. The soldering operation consists of a preheated flux of 90% Isopropyl alcohol being passed over the material in a "wave", followed by a washing step. Soldering is done in a Flowsolder machine. About 10 gallons per month of waste isopropyl alcohol is produced in this operation.

Circuit boards are also cleaned in a

SUMMARY OF FINDINGS

FACILITY DESCRIPTION AND OPERATIONS

Genesolv® DFX solvent machine with 90.9% trichlorotrifluoroethane generating about 5 gal/year of waste trichlorotrifluoroethane. (See attachment 1)

The only hazardous waste management process remaining on-site is drum storage in a 15 ft x 20 ft x 6 ft shed.

The treatment surface impoundment was closed in December 1985.

There are four (4) monitoring wells (well #1, #2, #3, #4). NJDEP Division of Water Resources changed RFL's "alternate assessment" status to "detection monitoring" in March, 1986 because there was no evidence of contamination during the previous year's monitoring data.

DEP required a minimum of four quarterly groundwater monitoring beginning January, 1986 by RFL. If no significant groundwater contamination is found, RFL can then request that their NJPDES permit be terminated.

However recent data for monitoring well #2

SUMMARY OF FINDINGS

FACILITY DESCRIPTION AND OPERATIONS

is now showing contamination with trichloroethylene (9 ppb) and 1,1,-dichloroethane (10 ppb)

Describe the activities that result in the generation of hazardous waste.

Cleaning of circuitboards with solvents (Isopropyl alcohol & Trichlorotrifluoroethane)

Identify the hazardous waste located on site, and estimate the approximate quantities of each. (Identify Waste Codes)

40 gallons of Isopropyl alcohol (D001)

C/2

AMERICAN DEWATERING CORPORATION

PUMPING CONTRACTORS

ADDRESS REPLY TO:
ROCKAWAY, NEW JERSEY 07866
TEL. 201 627-2100

April 12, 1966

Mr. Richard Seabury III
Radio Frequency Labs
Boonton, New Jersey

Dear Mr. Seabury:

We submit herewith our analysis of the pump test conducted under Purchase Order #92418-3202 dated March 30th, 1966.

Conclusion

We have evaluated the pump test data together with other available information as detailed below. It is our opinion that the shallow aquifer under your plant will not support withdrawal substantially in excess of what you are now taking, without a change in method.

Unfortunately, you appear to be in the extreme upstream end of a restricted underground basin which drains south into the Rockaway River. The coarse shallow sands from which you are presently drawing would be depleted in the course of the summer if pumped at a substantially higher rate.

There is a possibility that your additional requirements can be met by a somewhat different approach. A ground water budget could be set up, involving major dewatering in the basin under your plant during the 13 week summer season. You would then depend on recharge from the surface to replenish the water during the balance of the year.

Intentional dewatering of the basin on a cyclical basis would dry up your existing systems for domestic and air-conditioning water supply. The new system would therefore, have to replace these.

If you wish to explore this method further, we will be happy to discuss it with you.

It is disappointing to us as well as yourselves that the aquifer under your plant doesn't appear to be adequate to meet your additional requirements by an extension of your

ATTACHMENT D1

present development methods. However, we are sure that you will agree it is much better to be aware of these conditions in advance of construction.

With regard to the problem of temporary dewatering of the foundations of the new plant, we doubt that this can be integrated with a permanent water supply system. A system in this area adequate in size to accomplish the temporary dewatering could not be pumped on a continuous basis.

Data Sources

The analysis in this report is based on the following information:

1. Drilling in conjunction with wellpoint installations made in 1962.

2. Performance of existing wellpoint systems since 1962.

3. Controlled pump tests on existing wellpoint systems March 30th through April 6th, 1966.

4. Verbal information from RFL on geophysical studies conducted in the area.

5. USGS topographic maps, Boonton quadrangle.

6. Visual examination of topography.

Lithology

The topography indicates that RFL is situated at the headwaters of a small creek tributary to the Rockaway River. Drilling, test pumping and verbal reports of geophysical testing would indicate that the underground boundaries are approximately the same as the topographic boundaries. If so, the basin underneath the plant is roughly 1500 to 2000 feet wide and extends 5000 feet to the Rockaway. The ground surface falls 6 feet in 3000 feet, measured along the creek.

The basin is approximately 40 to 50 feet deep to bedrock and is filled with glacial outwash in beds of widely varying permeability. The top fourteen feet is coarse sand and gravel. The next 12 to 15 feet is fine brown silty sand. Below that drilling indicates very fine gray sandy silt.

The water table varies from 7 to 10 feet below the surface during the year.

The upper coarse material is highly pervious, but at the end of the summer contains only four feet of water, except for the narrow channel where the coarse material extends deeper.

D2

The intermediate fine brown sand yields water in some quantity when properly developed with wellpoints, but were it not for vertical recharge from the coarse material above, the yield of the fine brown sand would not hold up.

The gray sandy silt is not productive of water in quantity.

Present Withdrawals

RFL presently draws water for domestic uses from a hand dug well.

In addition, there are three wellpoint systems producing water for air-conditioning:

> The 10 wellpoint system for the manufacturing building, located in the coarse upper sands is rated at 100 gpm.
>
> The two systems servicing the quonset and hangar buildings, rated at 40 gpm and 30 gpm respectively, are located in the deeper fine brown sands.

After use, the air-conditioning water is spilled INTO the ground, and a substantial portion probably percolates back to the coarse upper sands. It has been reported that the ground water temperature rises measurably during the summer months, possibly due to this recirculation.

During the summer of 1962, the water table dropped two and one half feet between June and September, indicating that some part of the total volume pumped was drawn from storage, and that underground recharge was less than necessary to support the flow. Continuous flow rate:

$$\text{Total gpm} = 100 + 40 + 30 = 170$$
$$\text{Hours per week} = 40$$
$$\text{Equivalent continuous flow} = 170 \times \frac{40}{168} = 45 \text{ gpm.}$$

Thus, the underground recharge appears to be substantially less than 45 gpm during the summer months.

Pumping Test April 1966

A pumping test at 24 gpm was conducted for 110 hours, a total of 160,000 gallons.

Water pumped for domestic service during the test period (spanning a weekend) is estimated at less than 10,000 gallons and can be neglected.

D3

The aquifer shape is so complex that the results cannot be interpreted by conventional analysis. However, these conclusions can be drawn:

1. Time/drawdown data shows a consistently increasing slope, indicating the presence of barrier boundaries to the north and west of the plant. This coincides with topographic boundaries.

2. Recovery of water level in the upper coarse sand was very slow after pumping stopped, indicating a lack of underground recharge.

3. Just at the end of the test, the disposal pipe backed up flooding the area of the pumped wellpoints. Observation wells 1-2-3 quickly showed a recovery, indicating good vertical transmissibility of the shallow sands.

Additional Yield

Indications are that, with the existing pumping equipment the upper coarse sands have been developed to their maximum limit. There is little recharge, probably less than 40 gpm. and pumping at the present rate of 170 gpm, 40 hours per week is depleting the volume of storage in the upper sands over the course of the summer.

no longer running water over surface, all water is piped back into the ground.

Approximately 5 million gallons is presently being pumped from the ground in a 13 week season. We will assume one third of this is returned to the ground (balance being lost to runoff and evaporation) and another third is supplied by underground recharge. The total withdrawal from storage then would be 1.6 million gallons. This would represent dewatering of the upper sands to a maximum depth of 2 feet over a radius of 350 feet. Thus, a rough estimate of the dimensions of the underground basin checks with pumping experience.

It appears that further development must come from storage in the basin during the summer, and for year-to-year reliability will depend on replenishment from the surface in the winter and spring.

Ground Water Budget

The total volume of water stored above bedrock in the basin is probably on the order of 100 to 150 million gallons. That part of the water in the deep gray silty sand cannot be developed. Nevertheless, if a deep channel of the coarse upper sand, or even the intermediate brown sand, could be discovered, it might be feasible to develop a wellpoint system of 500 gpm intermittent capacity that could draw 15 million gallons from storage over the summer.

D4

It is possible that major dewatering such as this would increase underground recharge, by attracting flow from minor tributaries to the basin and from fissures in the rock. The dewatering would also cause a reverse flow, bringing water back to RFL that had already gone by en route to the Rockaway.

Data indicates conditions favorable to vertical replenishment during the off season, but with greater summer withdrawals the natural percolation may have to be assisted with man made structures.

The use of cyclical pumping within the available ground water budget seems feasible. However, it depends on a deep channel of clean sands, the existence of which is only partly evident from previous drilling. What evidence there is, points to the likelihood that the channel crosses over on the airport property, making it possible that an easement for the system will have to be procured.

A system intended to withdraw water from storage requires considerable sophistication in design, but the principles involved have been worked out in previous installations.

Very truly yours,

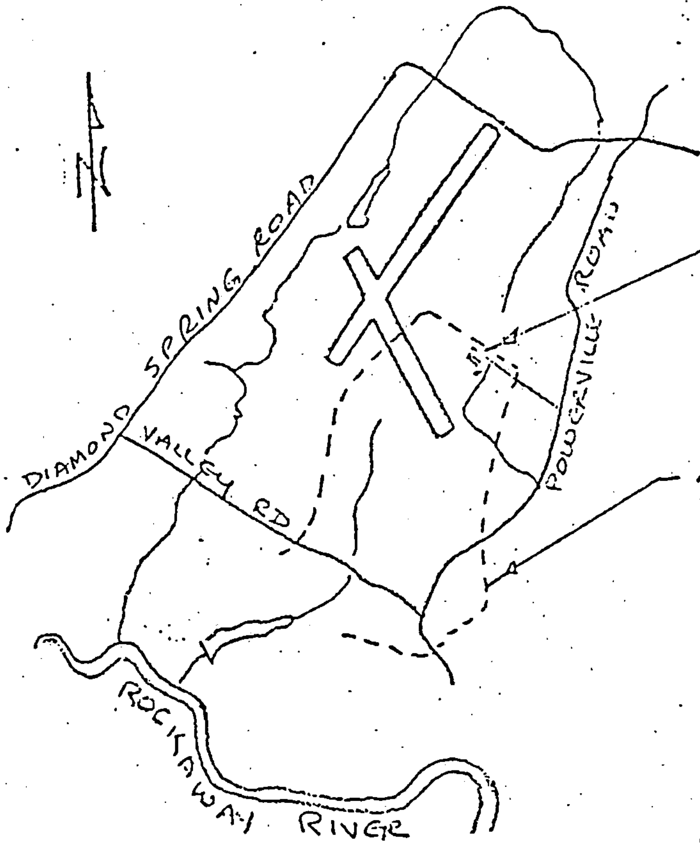
AMERICAN DEWATERING CORPORATION

J. Patrick Powers

J. Patrick Powers
Water Development Engineer

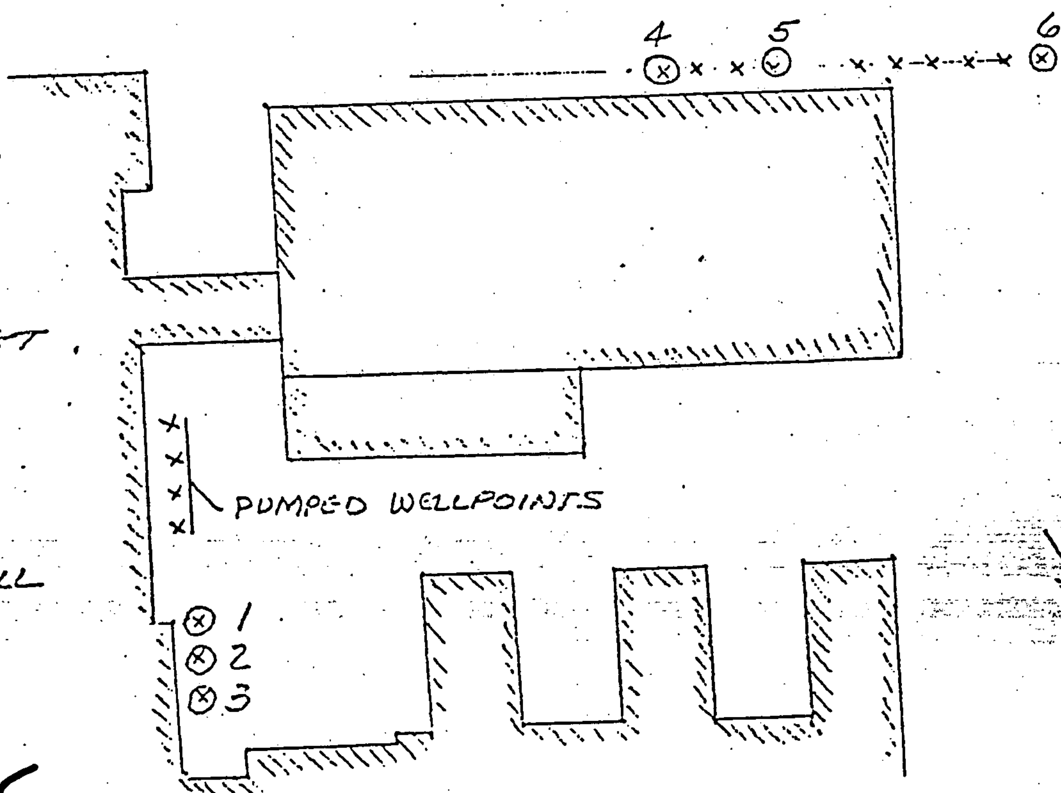
JPP:jh
cc: Hackensack
E. J. Moore, P. J. Jones
R. G. Lenz, T. C. Gill

D5



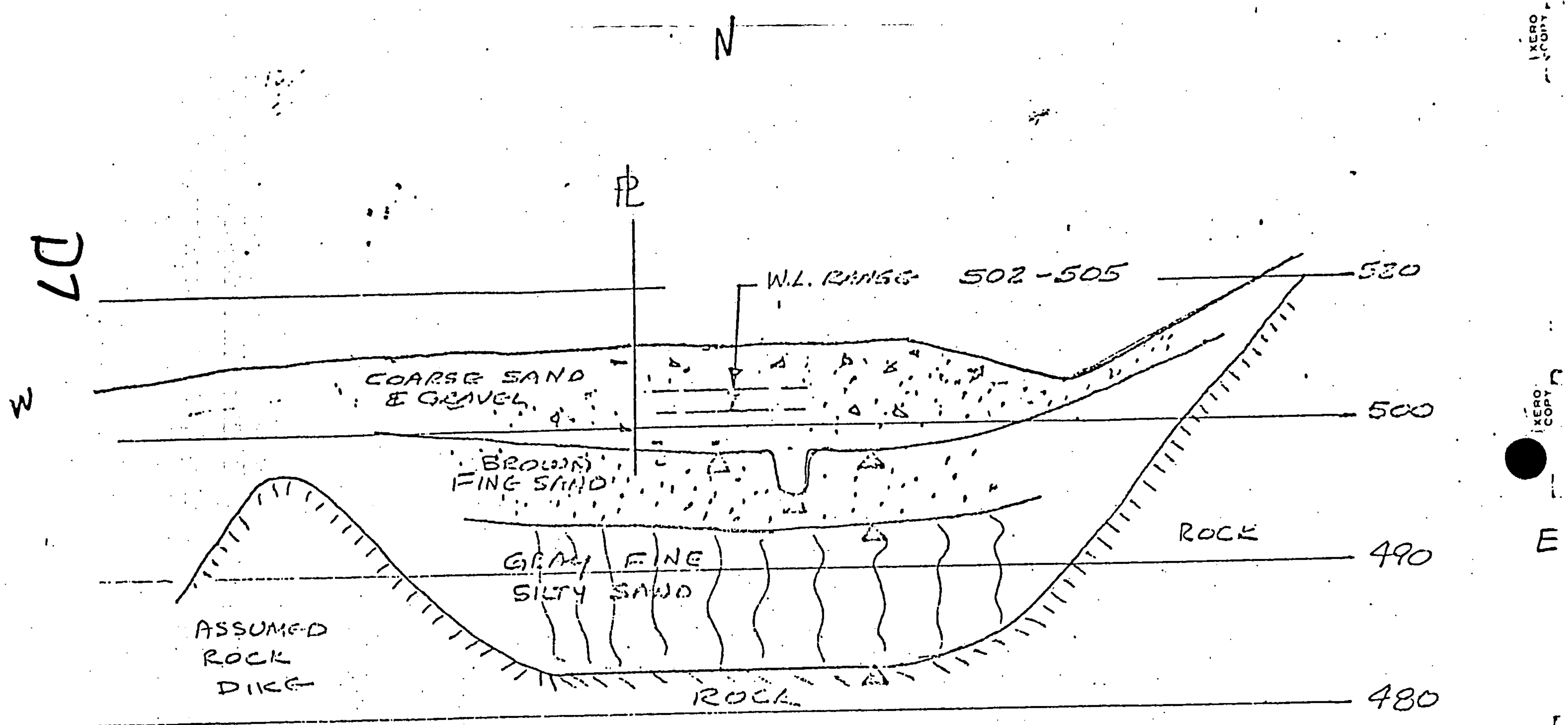
TOPOGRAPHY
1" = 2,000 FEET
FROM BOONTON QUADR.
USGS 1954

APRIL 1966
PUMP TEST
1" = 50 FEET



⊗ = OBS. WELL

D6



ASSUMED SOIL CONDITIONS ALONG E-W SECTION

RADIO FREQUENCY LABS
BOONTON, N.J.
4/11/66 JPP

SCALE HORIZ 1" = 200'
VERT 1" = 20'

KNOWN TRANSITIONS SHOWN THUS △

GROUND/WATER TECHNOLOGY, INC.

February 18, 1982

RFL Industries, Inc.
Powerville Road
Boonton, NJ 07005

Attention: Mr. Richard W. Seabury, III

Subject: Preliminary Hydrogeological Investigation

Gentlemen:

Ground/Water Technology has completed a preliminary investigation of the hydrogeology of the RFL Industries, Inc. property on Powerville Road in Boonton Township, New Jersey. This letter outlines the findings of this investigation and includes recommendations for further steps which can be taken in the assessment of the impact and extent of groundwater contamination.

LITERATURE REVIEW AND FIELD WORK

Ground/Water Technology reviewed many sources of information including reports of water resource studies of the Rockaway River Valley, a preliminary hydrogeological investigation of an adjacent industrial site, state well records, water quality data, and the report of the analysis of a pump test performed on the property. In addition, on-site subsurface information was reviewed from logs of the wellpoint installation, monitoring well installations and foundation test borings drilled on the property.

Ground/Water Technology personnel performed a geologic reconnaissance of surface features and collected information to indicate the characteristics of groundwater flow beneath the site.

GEOLOGY

The site is located on the buried portion of the southeast side of the northeast-southwest trending valley of Precambrian gneiss of the New Jersey Highlands. This is a portion of the Reading Prong of the New England physiographic province. The boring logs indicate that the uneven bedrock surface is approximately 25 to 45 feet beneath the surface. The bedrock in the area appears to form a shelf on the side of the main valley as bedrock depths greater than 100 feet have been found adjacent to the site.

100 Ford Road, P.O. Box 99, Denville, New Jersey 07834 (201) 625-5558

ATTACHMENT E-1

The soil on the site is predominantly Wisconsin stratified drift, a glacial deposit made up of layers of sand and gravel, sands, and silty sand. In the north end of the site (Refer to Figure 1) the wellpoint installation records indicate that the soil is made up of three strata. The uppermost is a 12 to 21 ft thick layer of well-graded sand and gravel overlying a 15 to 20 ft layer of brown fine sand. The lowest layer is a gray, silty sand which appears to extend to the bedrock. The monitor well boring logs indicate that the soil in the first 30 feet below the area of the evaporation pond is generally composed of a 10 to 20 ft layer of fine to medium sand or silty fine to medium sand, overlying a 20 to 10 ft thick layer of medium to coarse sand.

Over the past 50 to 60 years, development of the area has required the general leveling of the undulating topography on and adjacent to the RFL property. Boring logs reveal that portions of the present plant site are underlain by as much as 8 feet of fill.

The fire pond on the southeast side of the site was dug in a swampy area. This swamp extended to the vicinity of Building No. 12, as indicated by the presence of an organic layer and clay lenses encountered during construction.

GROUNDWATER FLOW

Ground/Water Technology personnel visited the site on December 29, 1981 to measure water level elevations in surface water bodies, monitor wells, wells and wellpoints on or adjacent to the site. The surface water elevations are considered to be exposures of the groundwater surface and were used in conjunction with the subsurface water levels to develop a contour map of the water table surface. On the date that these water level measurements were taken, the groundwater level appeared to be noticeably higher in the vicinity of the "dug well" by Building No. 6. It was reported that the wellpoint by Building No. 1A pumps constantly and any water from this wellpoint that is not needed is diverted to the dug well where it recharges the ground water. The air conditioning wellpoints along Buildings No. 2, 7, 13, and 14 are used only in the summer months and appeared to have no influence on groundwater levels at this time of year.

There was standing water in the evaporation pond, but it could not be discerned if this was a manifestation of any mounding of the water table, or "perched" water in the pond. The difference in the water level elevation in the evaporation pond and monitor well 2 was not characteristic of a mounded water table.

The groundwater levels of the monitor wells indicate that the ground water beneath the evaporation pond flows into the adjacent stream. In view of this, the location of monitor well 3 is probably outside the flow path from the lagoon to the stream.

The rate of flow of the ground water can be estimated from the slope of the water table (the hydraulic gradient) and an assumed permeability range of 10^{-4} to 10^{-2} cm/sec. for the soils as described in the area of the evaporation pond. Thus the flow rate would be in a range of 0.005 to 0.5 feet per day.

E2

GROUNDWATER QUALITY

Effluent limits for discharge to the lagoon and for the monitor wells have been set by the New Jersey Department of Environmental Protection, Division of Water Resource for compliance with the new NJPDES permit regulations. The air conditioning wellpoints, the dug well, the driven well, the wellpoint and the fire pond have all been tested within the past two years and none of these exceeded the limits set by the NJDEP. The water quality in the lagoon has been tested since January, 1979 and samples from the monitor wells have been tested since their installation in July, 1980. The discharge to the evaporation pond has been reduced from approximately 3000 gallons per day to 100 gallons per day since the termination of the printed circuit board manufacturing on the site in December, 1980. Monitor well No. 1 had been found only to exceed the limit for lead and is well within the limits for all organic compounds. Monitor wells No. 2 and 3 have been found to exceed the limits for various organic compounds. The test results for monitor wells 2 and 3 both show an increase in organic compounds between 5/1/81 and 5/14/81. Chemical concentrations in monitor well 2 rose from below the established limits to just above the established limits; while chemical concentrations in monitor well 3 rose from above the established limit to levels three to sixty times greater than the concentrations two weeks earlier. We find this sudden increase in concentration to be inconsistent with normal ground water transport, which usually produces gradual changes. It should be noted that the laboratories which tested the samples were different over this two week period.

SUMMARY

The following points are the salient results of our preliminary investigation:

1. The concentrations of chemicals in water supply wells on the property are less than the limits established by the NJDEP.

2. Groundwater flow from beneath the lagoon appears to be toward the adjacent stream.

3. Effluent limits have been exceeded at monitor well 2 and monitor well 3.

4. An abnormally rapid increase in the concentration of organic compounds in monitor well 3 occurred in May of 1980.

5. Monitor well 2 appears to be directly down-gradient in the groundwater flow path from the evaporation pond and therefore is a better indicator of the lagoon's influence on groundwater quality than is monitor well 3.

6. The discharge flow into the evaporation pond has been significantly reduced since December, 1980.

E3

RECOMMENDATIONS

A new set of water samples should be collected from the evaporation pond, the evaporation pond discharge and the monitor wells, to be tested for various chemicals that have been found in the ground water near the evaporation pond. It would be most effective to collect these samples near the end of the seasonal use of the evaporation pond. The results of these tests can be used to evaluate the present groundwater quality and whether any trends can be found in relationship to previous water quality test results. The depth to water should be measured in each monitor well before it is purged, when the samples are taken. A sample from the stream should be taken downstream of the evaporation pond to ascertain the impact, if any, of the seepage from the evaporation pond on the stream's water quality.

The above steps should indicate whether or not an additional monitor well is needed, such as if groundwater quality levels are found to be above the limits established by the NJDEP and/or the stream is found to be contaminated. If additional monitoring is required, monitor wells should probably be installed west of the evaporation pond to achieve a better understanding of the groundwater flow regime in the vicinity of the evaporation pond.

The above recommendations will provide a practical and economical means of determining the impact and extent of seepage from RFL's evaporation pond. We look forward to meeting with you to discuss our findings and recommendations in the near future.

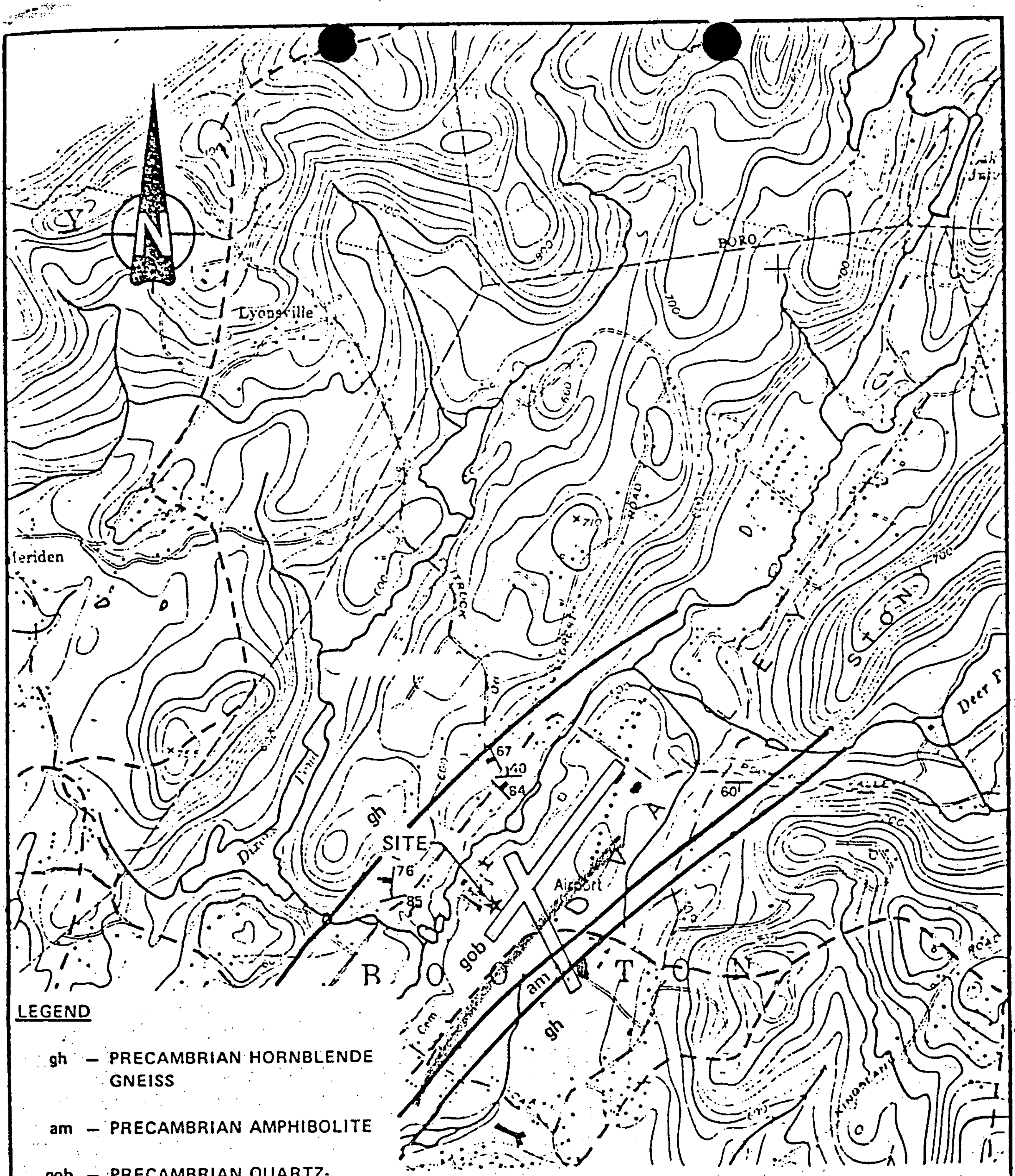
Sincerely,

GROUND/WATER TECHNOLOGY, INC.

William H. McTigue
Executive Vice President

WHM:law

E4



LEGEND

gh — PRECAMBRIAN HORNBLENDE GNEISS

am — PRECAMBRIAN AMPHIBOLITE

gob — PRECAMBRIAN QUARTZ-OLIGOCLASE- BIOTITE GNEISS

T60 — STRIKE AND DIP GNEISSOCITY

T84 — STRIKE AND DIP JOINT

ES

0 2000 4000 FT

GEOLOGIC MAP

WOODWARD—CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

WAYNE, NEW JERSEY

DR. BY:	CG	SCALE:	AS SHOWN	PROJ. NO.:	81C4119
CK'D. BY:	JB	DATE:	2 SEPT 1981	FIG. NO.:	5

Sample source: RFL Industries, Inc., Boonton, New Jersey

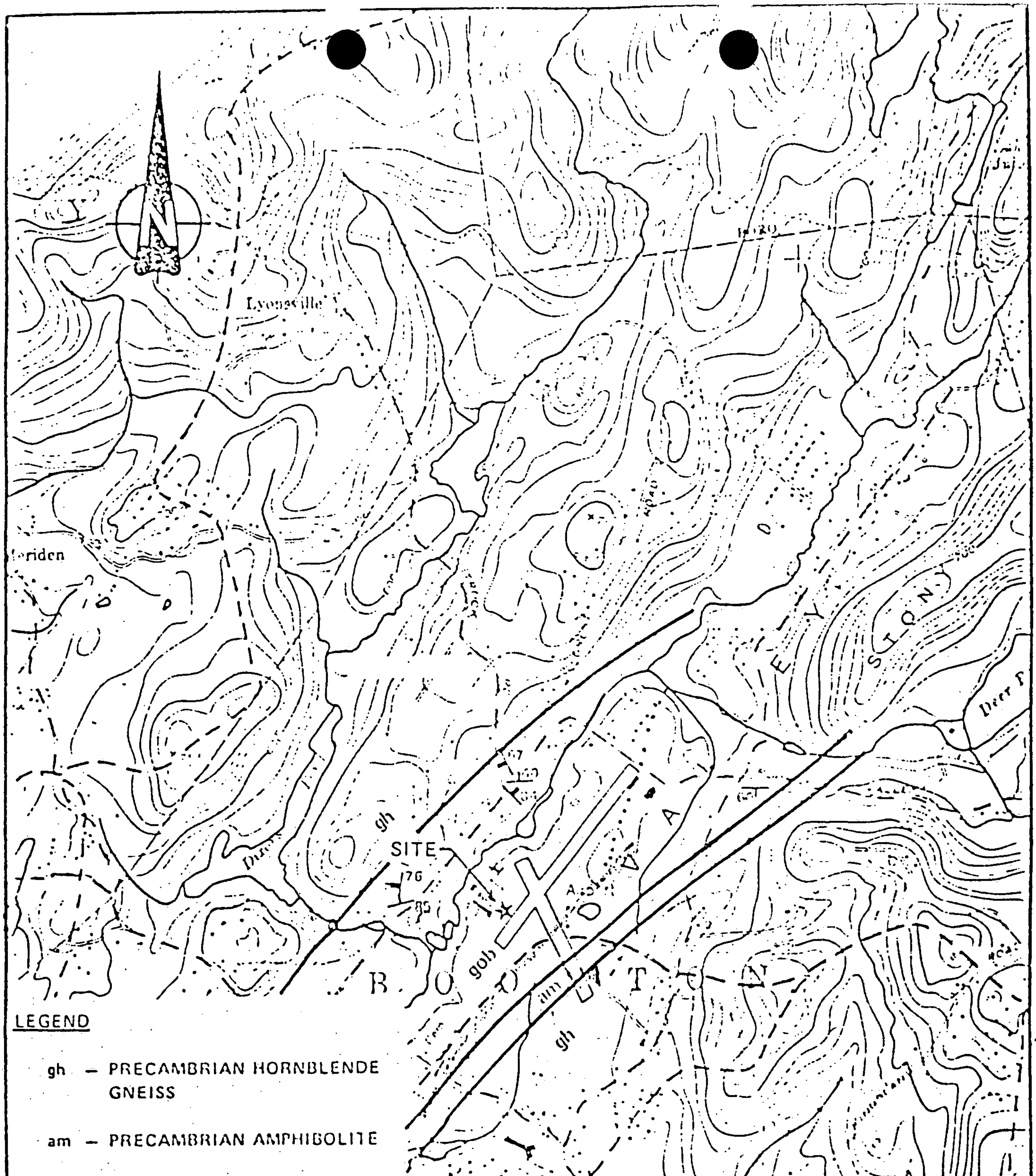
Sample date: May 1, 1981

Taken by: ICM, Randolph, New Jersey

Tested by: ICM, Randolph, New Jersey

	Results PPB		
	Monitor Well (1)	Monitor Well (2)	Monitor Well (3)
O-xylene	ND	ND	ND
M-xylene	ND	ND	ND
Tetrachloroethylene	ND	ND	ND
Ethyl benzene	ND	ND	ND
Toluene	ND	ND	ND
1,1,2,2 tetrachloroethane	ND	ND	ND
Benzene	ND	ND	ND
Trichloroethylene	ND	5.6	49
Carbon tetrachloride	ND	ND	ND
1,1,1 trichloroethane	ND	3.4	21.3
1,2 dichloroethane	ND	ND	ND
Chloroform	ND	ND	ND
1,2 dichloroethylene	ND	3.7	3.3
1,1 dichloroethane	ND	2.7	27.2
1,1 dichloroethylene	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND
Methylene chloride	ND	ND	9.8

E6



LEGEND

gh – PRECAMBRIAN HORNBLENDE GNEISS

am – PRECAMBRIAN AMPHIBOLITE

gob – PRECAMBRIAN QUARTZ-OLIGOCLASE-BIOTITE GNEISS

$\top_{60}$ – STRIKE AND DIP GNEISSOCITY

$\top_{84}$ – STRIKE AND DIP JOINT

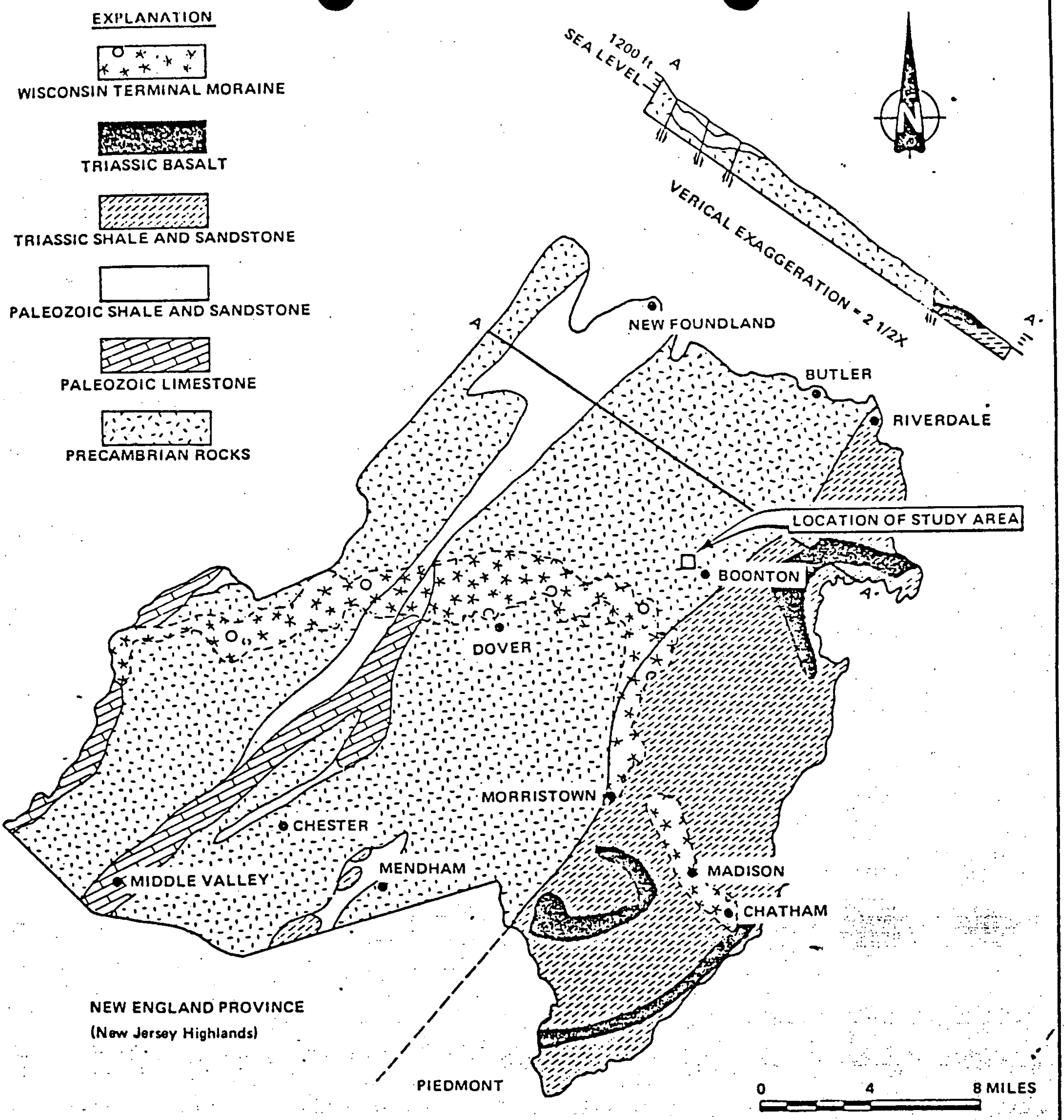
E7

0 2000 4000 FT

GEOLOGIC MAP

WOODWARD—CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
WAYNE, NEW JERSEY

DR BY:	CG	SCALE:	AS SHOWN	PROJ NO.:	81C4119
CK'D. BY:	JB	DATE:	2 SEPT 1981	FIG NO:	5



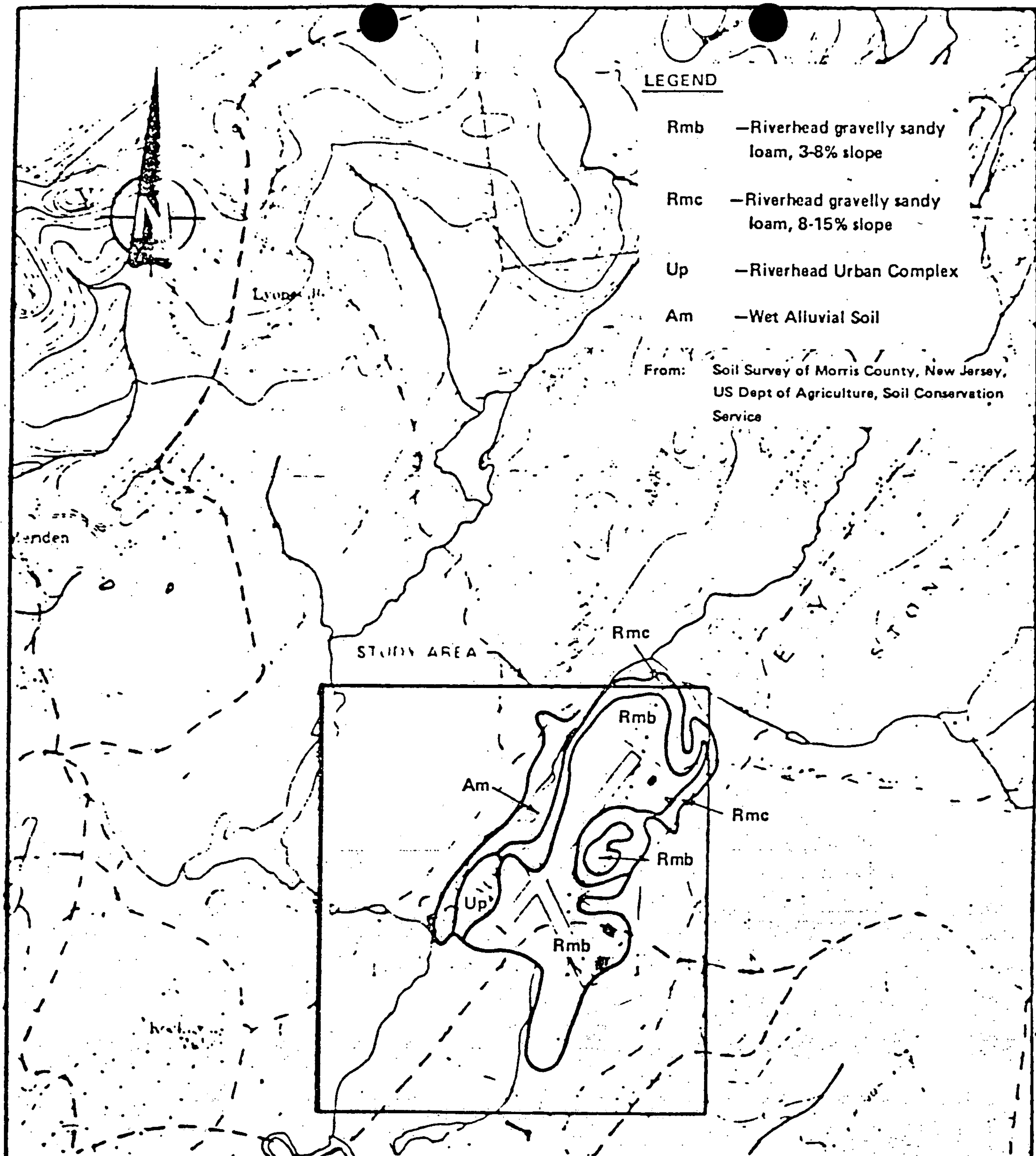
REFERENCE:
Special Report No. 25 — Morris County

E8

GENERALIZED GEOLOGIC MAP
OF MORRIS COUNTY, NEW JERSEY

WOODWARD—CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
WAYNE, NEW JERSEY

DR. BY:	BTD	SCALE:	AS SHOWN	PROJ. NO.:	81C4119
CK'D. BY:	HG	DATE:	12 AUG 1981	FIG. NO.:	4



LEGEND

MAJOR STREAM DIVIDES

ON SITE MINOR STREAM DIVIDES

E9

0 200 400 FT

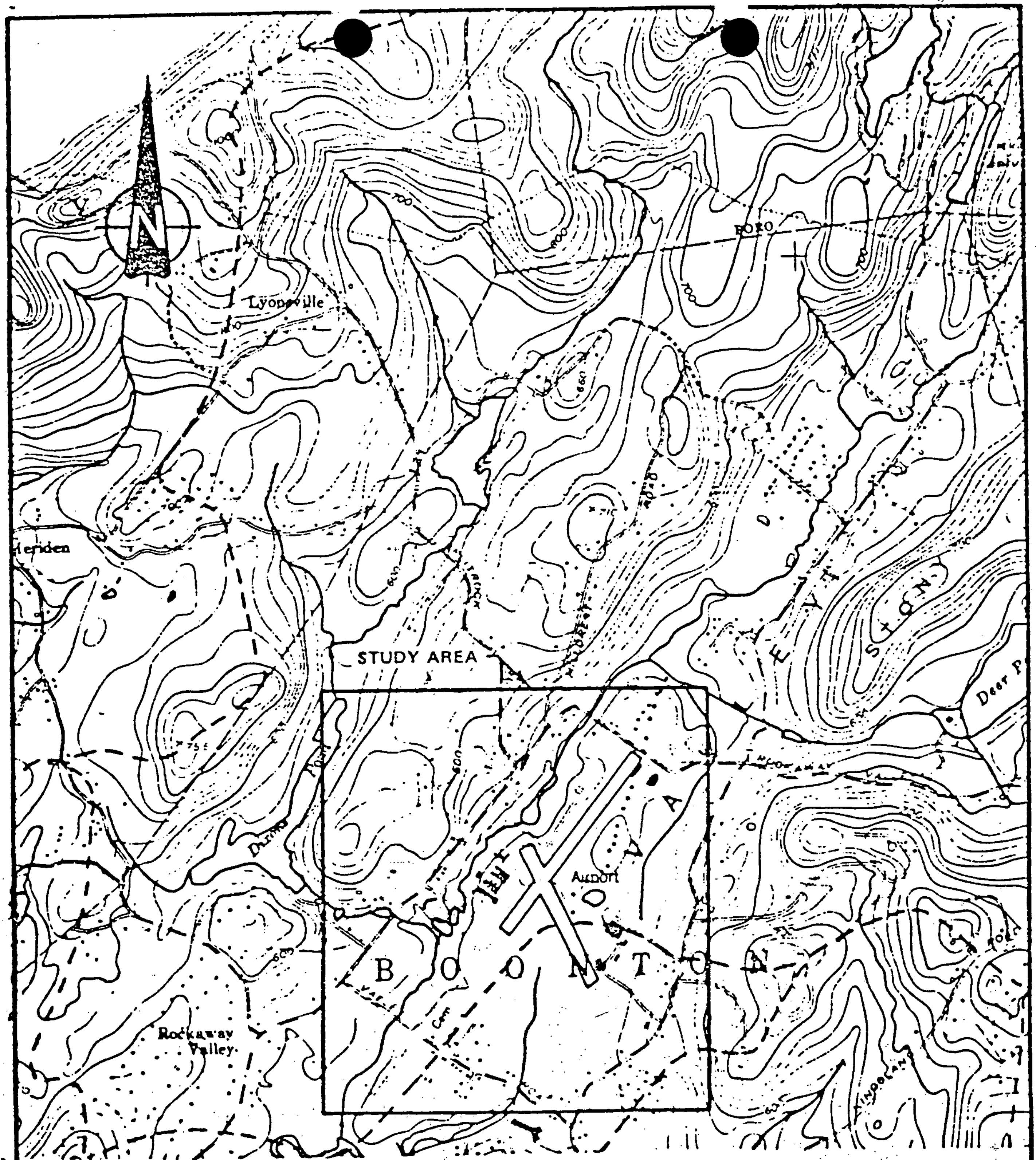
SOILS MAP

WOODWARD—CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

WAYNE, NEW JERSEY

DR BY	CG	SCALE	AS SHOWN	PROJ NO	[illegible]
CHK BY	JB	DATE	21 AUG 1981	FIG NO	3



LEGEND

- - - - MAJOR STREAM DIVIDES

. . . . ON SITE MINOR STREAM DIVIDES

E10

0 2000 4000 FT

LOCATION MAP

WOODWARD—CLYDE CONSULTANTS

CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS
WAYNE, NEW JERSEY

DR. BY: CG	SCALE: AS SHOWN	PROJ. NO.: 81C4119
CK'D. BY: JB	DATE: 26 AUG 1981	FIG. NO.: 1

OMB No. 158-R0100

FOR AGENCY USE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

STANDARD FORM C – MANUFACTURING AND COMMERCIAL

SECTION I. APPLICANT AND FACILITY DESCRIPTION

Unless otherwise specified on this form all items are to be completed. If an item is not applicable indicate 'NA.'

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

Please Print or Type

1. Legal Name of Applicant (see instructions)	101	R.E.L. INDUSTRIES INC.
2. Mailing Address of Applicant (see instructions) Number & Street	102a	POWERVILLE RD.
City	102b	BOONTON TOWNSHIP
State	102c	NEW JERSEY
Zip Code	102d	07005
3. Applicant's Authorized Agent (see instructions) Name and Title	103a	NONE
Number & Street Address	103b	
City	103c	
State	103d	
Zip Code	103e	
Telephone	103f	Area Code / Number
4. Previous Application If a previous application for a National or Federal discharge permit has been made, give the date of application. Use numeric designation for date.	104	NONE (YR MO DAY)

RECEIVED
MAR 01 1979
DEPT. ENVIRONMENTAL PROTECTION
NEWARK OFFICE

I certify that I am familiar with the information contained in this application and that to the best of my knowledge and belief such information is true, complete, and accurate.

RICHARD W. SEABURY III — Printed Name of Person Signing	102e	VICE PRESIDENT & CORP. SECRETARY — Title
[signature] — Signature of Applicant or Authorized Agent	102f	79 2 20 (YR MO DAY) — Date Application Signed

18 U.S.C. Section 1001 provides that:

Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and wilfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statement or representation, or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

FOR AGENCY USE

Received ____ ____ ____ (YR MO DAY)

OFFICE: ____ EPA Region Number
____ State

FOR AGENCY USE

5. Facility/Activity (see instructions) Give the name, ownership, and physical location of the plant or other operating facility where discharge(s) does or will occur.

Name — 105a: R.F.L. INDUSTRIES INC.
TOWNSHIP OF BOONTON
MORRIS COUNTY, NEW JERSEY

Ownership (Public, Private or Both Public and Private) — 105b: ☐ PUB ☒ PRV ☐ BPP

Check block if Federal Facility and give GSA Inventory Control Number — 105c: ☐ FED — 105d: N/A

Location

Street & Number	105e	POWERVILLE RD.
City	105f	BOONTON
County	105g	MORRIS
State	105h	NEW JERSEY

6. Nature of Business State the nature of the business conducted at the plant or operating facility. — 106a: MANUFACTURERS OF PRINTED CIRCUIT BOARDS, COMMUNICATION, THERMOCONTROL & MAGNETIC INSTRUMENTS.

106b — AGENCY USE

7. Facility Intake Water (see instructions) Indicate water intake volume per day by sources. Estimate average volume per day in thousand gallons per day.

Municipal or private water system	107a	N/A	thousand gallons per day
Surface water	107b	N/A	thousand gallons per day
Groundwater	107c	36,000	~~thousand~~ gallons per day — INTERMITENT, SEE ITEM 21B
Other*	107d	NONE	thousand gallons per day
Total Item 7	107e	36,000	~~thousand~~ gallons per day

*If there is intake water from 'other,' specify the source. — 107f: NONE

8. Facility Water Use Estimate average volume per day in thousand gallons per day for the following types of water usage at the facility. (see instructions)

Noncontact cooling water	108a	27,000	~~thousand~~ gallons per day — INTERMITENT, SEE ITEM 21B
Boiler feed water	108b	N/A	thousand gallons per day
Process water (including contact cooling water)	108c	5000	~~thousand~~ gallons per day
Sanitary water	108d	4000	~~thousand~~ gallons per day
Other*	108e	N/A	thousand gallons per day
Total Item 8	108f	36,000	~~thousand~~ gallons per day

*If there are discharges to 'other,' specify. — 108g: NONE

If there is 'Sanitary' water use, give the number of people served. — 108h: 300 people served

EPA Form 7550-23 (7-73)

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FOR AGENCY USE

9. All Facility Discharges and other Losses; Number and Discharge (see instructions) Volume Specify the number of discharge points and the volume of water discharged or lost from the facility according to the categories below. Estimate average volume per day in thousand gallons per day.

		Number of Discharge Points		Total Volume Used or Discharged, Thousand Gal/Day
Surface Water	109a1	0	109a2	
Sanitary wastewater transport system	109b1	1	109b2	4
Storm water transport system	109c1	0	109c2	
Combined sanitary and storm water transport system	109d1	0	109d2	
Surface impoundment with no effluent	109e1	0	109e2	
Underground percolation	109f1	1	109f2	27
Well Injection	109g1	0	109g2	
Waste acceptance firm	109h1	0	109h2	
Evaporation	109i1	0	109i2	
Consumption	109j1	1	109j2	5
Other*	109k1	0	109k2	
Facility discharges and volume Total Item 9.	109l1	3	109l2	36

*If there are discharges to 'other,' specify. 109m1 NONE

10. Permits, Licenses and Applications
List all existing, pending or denied permits, licenses and applications related to discharges from this facility (see instructions).

110	Issuing Agency (a)	For Agency Use (b)	Type of Permit or License (c)	ID Number (d)	Date Filed YR/MO/DA (e)	Date Issued YR/MO/DA (f)	Date Denied YR/MO/DA (g)	Expiration Date YR/MO/DA (h)
1.	NONE							
2.								
3.								

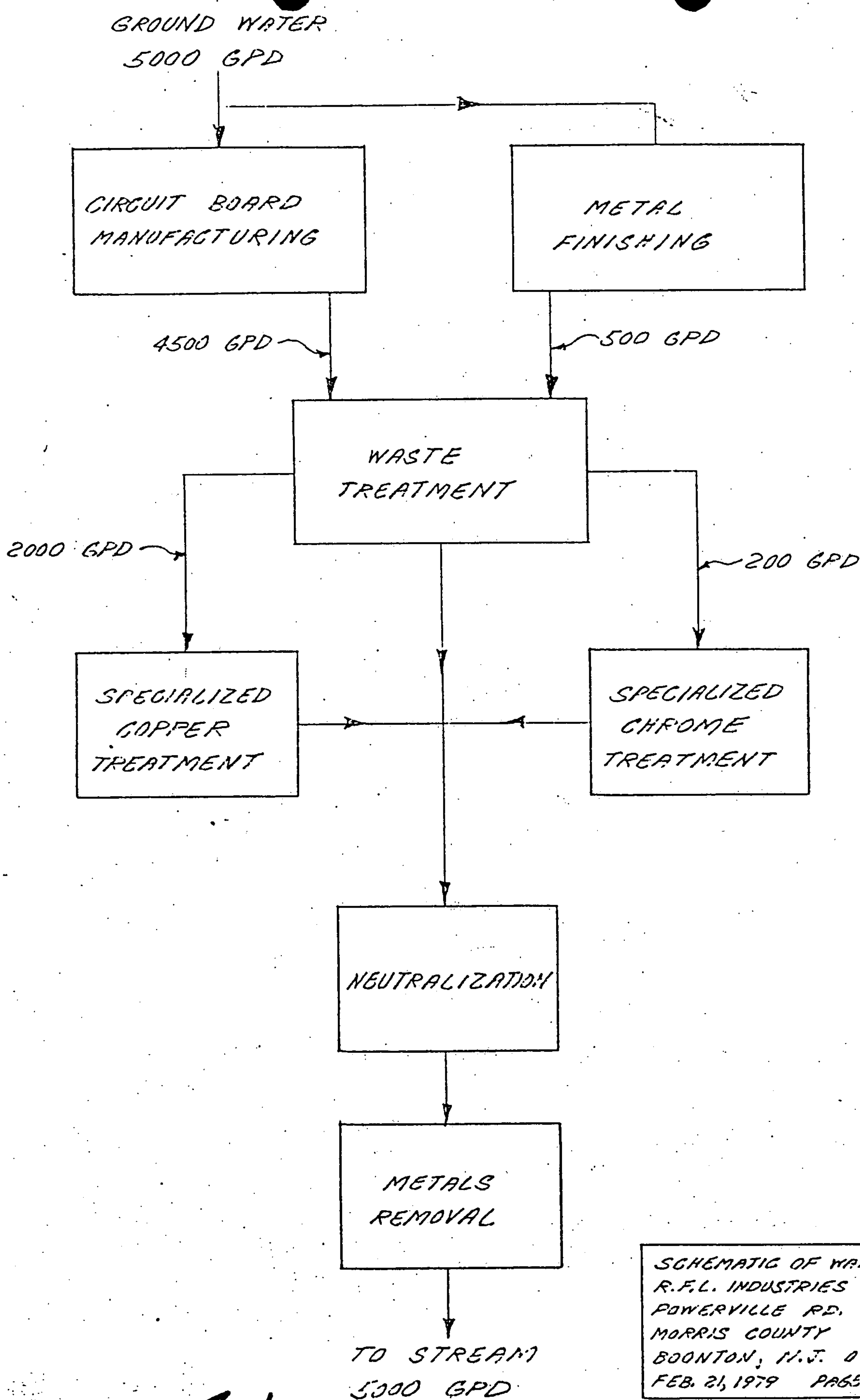
11. Maps and Drawings
Attach all required maps and drawings to the back of this application. (see instructions)

12. Additional Information

112 Item Number	Information
7,8+9	27,000 GPD INTERMITENT USED FOR AIR CONDITIONING FOR A PERIOD OF 4 MONTHS AND IS DISCHARGED INTO GROUND PERCOLATION.

EPA Form 7550–23 (7–73)

F3



SCHEMATIC OF WATER FLOW
R.F.L. INDUSTRIES INC.
POWERVILLE RD.
MORRIS COUNTY
BOONTON, N.J. 07005
FEB. 21, 1979 PAGE 1 OF 1

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FOR AGENCY USE

STANDARD FORM C – MANUFACTURING AND COMMERCIAL

SECTION III. WASTE ABATEMENT REQUIREMENTS & IMPLEMENTATION (CONSTRUCTION) SCHEDULE

This section requires information on any uncompleted implementation schedule which may have been imposed for construction of waste abatement facilities. Such requirements and implementation schedules may have been established by local, State, or Federal agencies or by court action. In addition to completing the following items, a copy of an official implementation schedule should be attached to this application. IF YOU ARE SUBJECT TO SEVERAL DIFFERENT IMPLEMENTATION SCHEDULES, EITHER BECAUSE OF DIFFERENT LEVELS OF AUTHORITY IMPOSING DIFFERENT SCHEDULES (Item 1a.) AND/OR STAGED CONSTRUCTION OF SEPARATE OPERATION UNITS (Item 1c), SUBMIT A SEPARATE SECTION III FOR EACH ONE.

FOR AGENCY USE

SCHED. NO. ______

1. Improvements — 300

a. Discharge Serial Number Affected List the discharge serial numbers, assigned in Section II, that are covered by this implementation schedule. — 301a: 001, ____, ____, ____, ____, ____

b. Authority Imposing Requirements Check the appropriate item indicating the authority for implementation schedule. If the identical implementation schedule has been ordered by more than one authority, check the appropriate items. (see instructions)

Locally developed plan	301b	☐ LOC
Areawide Plan		☐ ARE
Basic Plan		☐ BAS
State approved implementation schedule		☐ SQS
Federal approved water quality standards implementation plan.		☒ WQS
Federal enforcement procedure or action		☐ ENF
State court order		☐ CRT
Federal court order		☐ FED

c. Facility Requirement. Specify the 3-character code of those listed below that best describes in general terms the requirement of the implementation schedule and the applicable six-character abatement code(s) from Table II of the instruction booklet. If more than one schedule applies to the facility because of a staged construction schedule, state the stage of construction being described here with the appropriate general action code. Submit a separate Section III for each stage of construction planned.

301c — 3-character (general): NEW

301d — 6-character (specific) (see Table II): ESEPAR, CNEUTR, PMIXED

New Facility	NEW
Modification (no increase in capacity or treatment)	MOD
Increase in Capacity	INC
Increase in Treatment Level	INT
Both Increase in Treatment Level and Capacity	ICT
Process Change	PRO
Elimination of Discharge	ELI

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FOR AGENCY USE

2. Implementation Schedule and 3. Actual Completion Dates

Provide dates imposed by schedule and any actual dates of completion for implementation steps listed below. Indicate dates as accurately as possible. (see instructions)

Implementation Steps		2. Schedule (Yr./Mo./Day)		3. Actual Completion (Yr./Mo./Day)
a. Preliminary plan complete	302a	79 / 4 / 15	303a	___/___/___
b. Final plan submission	302b	79 / 6 / 1	303b	___/___/___
c. Final plan complete	302c	___/___/___	303c	___/___/___
d. Financing complete & contract awarded	302d	___/___/___	303d	___/___/___
e. Site acquired	302e	___/___/___	303e	___/___/___
f. Begin action (e.g., construction)	302f	80 / 4 / 1	303f	___/___/___
g. End action (e.g., construction)	302g	80 / 9 / 30	303g	___/___/___
h. Discharge Began	302h	80 / 9 / 30	303h	___/___/___
i. Operational level attained	302i	80 / 11 / 30	303i	___/___/___

STANDARD FORM C – MANUFACTURING AND COMMERCIAL

FOR AGENCY USE

SECTION II. BASIC DISCHARGE DESCRIPTION

Complete this section for each discharge indicated in Section I, Item 9, that is to surface waters. This includes discharges to municipal sewerage systems in which the wastewater does not go through a treatment works prior to being discharged to surface waters. Discharges to wells must be described where there are also discharges to surface waters from this facility. SEPARATE DESCRIPTIONS OF EACH DISCHARGE ARE REQUIRED EVEN IF SEVERAL DISCHARGES ORIGINATE IN THE SAME FACILITY. All values for an existing discharge should be representative of the twelve previous months of operation. If this is a proposed discharge, values should reflect best engineering estimates.

ADDITIONAL INSTRUCTIONS FOR SELECTED ITEMS APPEAR IN SEPARATE INSTRUCTION BOOKLET AS INDICATED. REFER TO BOOKLET BEFORE FILLING OUT THESE ITEMS.

1. Discharge Serial No. and Name
   a. Discharge Serial No. (see instructions) — 201a — 001
   b. Discharge Name Give name of discharge, if any. (see instructions) — 201b —
   c. Previous Discharge Serial No. If previous permit application was made for this discharge (see Item 4, Section I), provide previous discharge serial number. — 201c — N/A.
2. Discharge Operating Dates
   a. Discharge Began Date If the discharge described below is in operation, give the date (within best estimate) the discharge began. — 202a — N/A (YR MO)
   b. Discharge to Begin Date If the discharge has never occurred but is planned for some future date, give the date (within best estimate) the discharge will begin. — 202b — 80-9 (YR MO)
   c. Discharge to End Date If discharge is scheduled to be discontinued within the next 5 years, give the date (within best estimate) the discharge will end. — 202c — N/A (YR MO)
3. Engineering Report Available Check if an engineering report is available to reviewing agency upon request. (see instructions) — 203 — ☐ WILL BE AVAILABLE JUNE 1979
4. Discharge Location Name the political boundaries within which the point of discharge is located.

				Agency Use
State	204a	N.J.	204d	
County	204b	MORRIS	204e	
(if applicable) City or Town	204c	TWP. OF BOONTON	204f	

5. Discharge Point Description Discharge is into (check one): (see instructions)
   - Stream (includes ditches, arroyos, and other intermittent watercourses) — 205a — ☒ STR
   - Lake — ☐ LKE
   - Ocean — ☐ OCE
   - Municipal Sanitary Wastewater Transport System — ☐ MTS
   - Municipal Combined Sanitary and Storm Transport System — ☐ MCS

FOR AGENCY USE

Municipal Storm Water Transport System		☐ STS
Well (Injection)		☐ WEL
Other		☐ OTH
If 'other' is checked, specify	205b	
6. Discharge Point — Lat/Long Give the precise location of the point of discharge to the nearest second.		
Latitude	206a	40 DEG 55 MIN 50 SEC
Longitude	206b	74 DEG 25 MIN 36 SEC
7. Discharge Receiving Water Name Name the waterway at the point of discharge.(see instructions)	207a	R.F.L. FIRE POND WHICH FLOWS INTO R.F.L. BROOK
If the discharge is through an outfall that extends beyond the shoreline or is below the mean low water line, complete Item 8.	207b	For Agency Use: Major / Minor / Sub; 207c; For Agency Use: 303e
8. Offshore Discharge		
a. Discharge Distance from Shore	208a	N/A feet
b. Discharge Depth Below Water Surface	208b	N/A feet
9. Discharge Type and Occurrence		
a. Type of Discharge Check whether the discharge is continuous or intermittent. (see instructions)	209a	☒ (con) Continuous ☐ (int) Intermittent
b. Discharge Occurrence Days per Week Enter the average number of days per week (during periods of discharge) this discharge occurs.	209b	5 days per week
c. Discharge Occurrence — Months If this discharge normally operates (either intermittently, or continuously) on less than a year-around basis (excluding shutdowns for routine maintenance), check the months during the year when the discharge is operating. (see instructions)	209c	☒ JAN ☒ FEB ☒ MAR ☒ APR ☒ MAY ☒ JUN ☒ JUL ☒ AUG ☒ SEP ☒ OCT ☒ NOV ☒ DEC
:omplete Items 10 and 11 if "Inter-ıittent" is checked in Item 9.a.)therwise, proceed to Item 12.		
0. Intermittent Discharge Quantity State the average volume per discharge occurrence in thousands of gallons.	210	N/A thousand gallons per discharge occurrence.
11. Intermittent Discharge Duration and Frequency		
a. Intermittent Discharge Duration Per Day State the average number of hours per day the discharge is operating.	211a	N/A hours per day
b. Intermittent Discharge Frequency State the average number of discharge occurrences per day during days when discharging.	211b	N/A discharge occurrences per day
12. Maximum Flow Period Give the time period in which the maximum flow of this discharge occurs.	212	From N/A (month) to ____ (month)

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FOR AGENCY USE

13. **Activity Description** Give a narrative description of activity producing this discharge.(see instructions)

213a 001
MANUFACTURE OF PRINTED CIRCUIT BOARDS AND SURFACE FINISHING OF METALIC PARTS.

14. **Activity Causing Discharge** For each SIC Code which describes the activity causing this discharge, supply the type and maximum amount of either the raw material consumed (Item 14a) or the product produced (Item 14b) in the units specified in Table I of the Instruction Booklet. For SIC Codes not listed in Table I, use raw material or production units normally used for measuring production.(see instructions)

SIC 3471

a. **Raw Materials**

	SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
214a	(1)	(2)	(3)	(4)	(5)
	N/A				

b. **Products**

	SIC Code	Name	Maximum Amount/Day	Unit (See Table I)	Shared Discharges (Serial Number)
214b	(1)	(2)	(3)	(4)	(5)
	3471	CIRCUIT BOARDS	500	BOARDS	001

FOR AGENCY USE

15. Waste Abatement

a. Waste Abatement Practices
Describe the waste abatement practices used on this discharge with a brief narrative. (see instructions)

215a Narrative: ALL RINSES WILL BE PH NEUTRALIZED. CHROME WILL BE REDUCED AND PERCIPITATED. METALS WILL BE REMOVED BY FILTRATION.

b. Waste Abatement Codes
Using the codes listed in Table II of the Instruction Booklet, describe the waste abatement processes for this discharge in the order in which they occur if possible.

215b

(1) ESEPAR	(2) ESEGRE	(3)
(4) DRECOT	(5) LOCALS	(6) PEQUAL
(7) PSKIMC	(8) PSEPAR	(9) PDIRTU
(10) CNEUTR	(11) CCOAGU	(12)
(13) CFLOCC	(14) STHICK	(15)
(16)	(17)	(18)
(19)	(20)	(21)
(22)	(23)	(24)
(25)		

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D. HARGE SERIAL NUMBER

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FOR AGENCY USE

16. Wastewater Characteristics

Check the box beside each constituent which is present in the effluent (discharge water). This determination is to be based on actual analysis or best estimate. (see instructions)

Parameter 216	Present	Parameter 216	Present
Color 00080		Copper 01042	✓
Ammonia 00610	✓	Iron 01045	✓
Organic nitrogen 00605		Lead 01051	✓
Nitrate 00620	✓	Magnesium 00927	
Nitrite 00615		Manganese 01055	
Phosphorus 00665		Mercury 71900	
Sulfate 00945	✓	Molybdenum 01062	
Sulfide 00745		Nickel 01067	✓
Sulfite 00740		Selenium 01147	
Bromide 71870		Silver 01077	
Chloride 00940	✓	Potassium 00937	
Cyanide 00720		Sodium 00929	✓
Fluoride 00951	✓	Thallium 01059	
Aluminum 01105	✓	Titanium 01152	
Antimony 01097		Tin 01102	✓
Arsenic 01002		Zinc 01092	
Beryllium 01012		Algicides* 74051	
Barium 01007		Chlorinated organic compounds* 74052	
Boron 01022		Pesticides* 74053	
Cadmium 01027		Oil and grease 00550	
Calcium 00916	✓	Phenols 32730	
Cobalt 01037		Surfactants 38260	✓
Chromium 01034	✓	Chlorine 50060	
Fecal coliform bacteria 74055		Radioactivity* 74050	

*Specify substances, compounds and/or elements in Item 26.

Pesticides (insecticides, fungicides, and rodenticides) must be reported in terms of the acceptable common names specified in *Acceptable Common Names and Chemical Names for the Ingredient Statement on Pesticide Labels*, 2nd Edition, Environmental Protection Agency, Washington, D.C. 20250, June 1972, as required by Subsection 162.7(b) of the Regulations for the Enforcement of the Federal Insecticide, Fungicide, and Rodenticide Act.

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FOR AGENCY USE

17. Description of Intake and Discharge

For each of the parameters listed below, enter in the appropriate box the value or code letter answer called for.(see instructions)

In addition, enter the parameter name and code and all required values for any of the following parameters if they were checked in Item 16; ammonia, cyanide, aluminum, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, zinc, phenols, oil and grease, and chlorine (residual).

Parameter and Code 217a	Influent: Untreated Intake Water (Daily Average) (1)	Influent: In-Plant Treated Intake Water (Daily Average) (2)	Effluent: Daily Average (3)	Effluent: Minimum Value Observed or Expected During Discharge Activity (4)	Effluent: Maximum Value Observed or Expected During Discharge Activity (5)	Effluent: Frequency of Analysis (6)	Effluent: Number of Analyses (7)	Effluent: Sample Type (8)
Flow* Gallons per day 00056	5000 GAL	N/A	5000 GAL	5000 GAL	5000 GAL	SEE ITEM 22b	SEE ITEM 22b	SEE ITEM 22b
pH Units 00400	6.3	N/A	X	6.5	9.5	"	"	"
Temperature (winter) °F 74028	52	N/A	55	50	60	"	"	"
Temperature (summer) °F 74027	58	N/A	65	60	70	"	"	"
Biochemical Oxygen Demand (BOD 5-day) mg/l 00310	3	N/A	15	10	50	"	"	"
Chemical Oxygen Demand (COD) mg/l 00340	8	N/A	75	40	150	"	"	"
Total Suspended (nonfilterable) Solids mg/l 00530	111	N/A	15	5	30	"	"	"
Specific Conductance micromhos/cm at 25° C 00095	120 SIEMEN	N/A	X	UNKNOWN	UNKNOWN	"	"	"
Settleable Matter (residue) ml/l 00545	5	N/A	1	0	3	"	"	"

*Other discharges sharing intake flow (serial numbers).(see instructions)

DISCHARGE SERIAL NUMBER

FOR AGENCY USE

17. (Cont'd.)

Parameter and Code 217a	Influent: Untreated Intake Water (Daily Average) (1)	Influent: In-Plant Treated Intake Water (Daily Average) (2)	Effluent: Daily Average (3)	Effluent: Minimum Value Observed or Expected During Discharge Activity (4)	Effluent: Maximum Value Observed or Expected During Discharge Activity (5)	Effluent: Frequency of Analysis (6)	Effluent: Number of Analyses (7)	Effluent: Sample Type (8)

18. Plant Controls Check if the following plant controls are available for this discharge. **218**

Alternate power source for major pumping facility. ☐ APS

Alarm or emergency procedure for power or equipment failure ☒ ALM

Complete item 19 if discharge is from cooling and/or steam water generation and water treatment additives are used.

19. Water Treatment Additives If the discharge is treated with any conditioner, inhibitor, or algicide, answer the following:

a. Name of Material(s) **219a** N/A

b. Name and address of manufacturer **219b** N/A

c. Quantity (pounds added per million gallons of water treated). **219c** N/A

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FOR AGENCY USE

d. Chemical composition of these additives (see instructions). 219d N/A

Complete items 20-25 if there is a thermal discharge (e.g., associated with a steam and/or power generation plant, steel mill, petroleum refinery, or any other manufacturing process) and the total discharge flow is 10 million gallons per day or more. (see instructions)

20. Thermal Discharge Source Check the appropriate item(s) indicating the source of the discharge. (see instructions) 220

Boiler Blowdown	☐ BLBD
Boiler Chemical Cleaning	☐ BCCL
Ash Pond Overflow	☐ APOF
Boiler Water Treatment — Evaporator Blowdown	☐ EPBD
Oil or Coal Fired Plants — Effluent from Air Pollution Control Devices	☐ OCFP
Condense Cooling Water	☐ COND
Cooling Tower Blowdown	☐ CTBD
Manufacturing Process	☐ MFPR
Other	☐ OTHR

N/A

21. Discharge/Receiving Water Temperature Difference

Give the maximum temperature difference between the discharge and receiving waters for summer and winter operating conditions. (see instructions)

Summer 221a _____ °F.

Winter 221b _____ °F.

22. Discharge Temperature, Rate of Change Per Hour 222 _____ °F./hour

Give the maximum possible rate of temperature change per hour of discharge under operating conditions. (see instructions)

23. Water Temperature, Percentile Report (Frequency of Occurrence)

In the table below, enter the temperature which is exceeded 10% of the year, 5% of the year, 1% of the year and not at all (maximum yearly temperature). (see instructions)

Frequency of occurrence		10%	5%	1%	Maximum
a. Intake Water Temperature (Subject to natural changes)	223a	°F	°F	°F	°F
b. Discharge Water Temperature	223b	°F	°F	°F	°F

24. Water Intake Velocity (see instructions) 224 _____ feet/sec.

25. Retention Time Give the length of time, in minutes, from start of water temperature rise to discharge of cooling water. (see instructions) 225 _____ minutes

DISCHARGE SERIAL NUMBER

FOR AGENCY USE

26. Additional Information

226

Item	Information
227a	ALL ITEMS ARE ESTIMATED FOR FUTURE DISCHARGE

EPA Form 7550-23 (7-73)

F15

GROUND/WATER TECHNOLOGY, INC.

100 Stickle Avenue
P.O. Box 316
Rockaway, New Jersey 07866
(201) 625-5558 or (201) 627-2100

February 20, 1987

Mr. Henry Schuver
New Jersey Department of Environmental Protection
Ground Water Quality Control Section
CN 029
Trenton, New Jersey

Reference: NJPDES Permit #NJ0099104
Dowty RFL Industries
Boonton, New Jersey

Dear Mr. Schuver:

As per our telephone conversation of 2/19/87, regarding the 2/3/87 letter from NJDEP to Mr. Jack Slater of Dowty RFL denying termination of their NJPDES permit, we request that the monitoring requirements be revised to reduce both the number of locations being monitored and the parameters to be analyzed.

Currently, Dowty RFL collects samples from four monitor wells and at three surface water locations. The former lagoon was closed and sediments were removed in December 1985. One monitor well is located upgradient of the old lagoon location, three are hydraulically downgradient. One surface water sample is collected upgradient where the stream enters onto Dowty RFL property. Another surface water sample is collected immediately downgradient of the old lagoon, the third is located where the stream crosses Valley Road (about 2100 feet downstream).

The flow direction of contamination is apparently from the old lagoon past monitor well MW#2 and directly into the drainage stream. Occasionally low levels of volatiles have been analyzed from the stream location immediately downgradient of the old lagoon. However, all trace of volatiles have been removed from the stream, apparently by natural agitation in the flow, by the time the water reaches Valley Road, thereby posing no health risk to downstream users.

Prior to lagoon closure, contamination levels had decreased to only minor concentrations of total volatile organics (VO's) in MW#2. The analysis of 11/26/85 indicated a concentration of 13ppb(VO's). The analyses of 1/23/86, after closure, indicated 18ppb(VO's). Apparently as a result of closure a minor contamination was generated and concentrations increased to 90ppb(VO's) on 4/11/86. After that peak, the concentration again steadily decreased with time to 56ppb(VO's) on 7/18/86 and

ATTACHMENT G1

finally to 11ppb(VO's) on 10/10/86. On 10/10/86 the only volatile component testing positive was Trichloroethylene (TCE).

During this entire year there has been no indication of volatiles present in wells MW#1, MW#3, or MW#4. We therefore request the following monitoring changes be approved:

- Limit the parameters to be tested to volatile organic compounds only.

- Since the compound of interest is known, ie., TCE, testing by GC only is proposed since the sensitivity is greater as well as the analytical cost being significantly lower.

- Since monitor wells MW#3 and MW#4 have not shown any volatile organic contamination for the past year we request that they be removed from the required monitoring.

- Since no volatile contamination has been seen at the Downstream Valley Road location, we request that it too be removed from the required monitoring.

- Monitoring of wells MW#1 and MW#2 as well as the upstream and the one downstream location would continue, except that only testing for volatile organics by GC methods is proposed.

We feel that these revisions to the monitoring program are reasonable based upon the experience and history of water quality testing gained on site since 1979. Attached is a copy of the latest groundwater contour map (10/10/86) showing the location of the monitor wells, stream sammpling points and proposed changes.

We thank you for your willingness to consider modifications to the sampling program. Should you require further information or wish to discuss this request please contact me at either (201)625-5558 or (201)627-2100.

Very truly yours,

GROUND/WATER TECHNOLOGY, INC.

Gary J. Cluen

Gary J. Cluen
Project Manager

GJC:kb

cc: Mr. Jack Slater, Dowty RFL
Mr. James Groome, NJDEP-BCM
Mr. Kevin Krause, NJDEP-BFO

G2

0 [illegible]

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
TRENTON, NEW JERSEY 08625

GEORGE G. McCANN, P.E.
DIRECTOR

DIRK C. HOFMAN, [illegible]
DEPUTY DIRECTO[illegible]

Mr. E. J. Slater, Manager
Dowty-RFL Industries, Inc.
Powerville Road
Boonton, New Jersey 07005-0239

FEB 03 1987

RE: Requested termination of NJPDES permit # NJ0099104

Dear Mr. Slater:

Based on a review of ground water monitoring data obtained since closure of the hazardous waste lagoon, the Department does not believe that termination of your NJPDES permit as requested by Gary Cluen of Ground/Water Technology, Inc. in a letter dated December 23, 1986, is appropriate at this time.

Although the number, and, to some extent, the levels of contaminants in the ground water downgradient of the lagoon area have decreased since its closure, the levels of some contaminants remain above those recommended by the NJDEP for ground water. In particular, trichloroethylene (TCE) a listed carcinogen, has a maximum acceptable limit of 5 ppb in ground water. TCE has consistently exceeded this level in every sample from well #2 (immediately downgradient of the former lagoon area). Additionaly, TCE has not been detected at any level in well #1 (immediantly upgradient of the closed lagoon area). For the reasons stated above the request to terminate Dowty-RFL Industries NJPDES Permit # NJ0099104 is being denied.

At least four additional quarters of monitoring should be completed before permit termination may again be requested. If you have any questions or comments contact Henry Schuver of my staff at (609) 292-8427.

Sincerely,

Ken Siet, Chief
Ground Water Quality Control Section

WQM239
cc: Mr. James Groome - NJDEP - BCM
Mr. Gary Cluen - Ground/Water Technology, Inc.
Lori Amato - USEPA Region II- NJ Permitting

ATTACHMENT H1

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO DISTRIBUTION LIST

FROM MELINDA DOWER MD THROUGH B. Berg, KB DATE MAY 0 2 1984
Supervisor, Land Application of Wastewater

SUBJECT DOWTY RFL INDUSTRIES/BOONTON, NJ/NJ0099104

Attached please find an Initial Interim IWMF or HWF NJPDES permit drafted pursuant to the State Water Pollution Control Act and the RCRA regulations as delegated to the State effective February 2, 1983.

This permit is required by the delegation agreement with the USEPA signed by Commissioner Hughey. These are high priority facilities. For this reason we are requesting that you review these draft permits within five (5) working days of the date of this memo or we will issue it as it is.

WQM65:ljp
Attachment
<u>DISTRIBUTION LIST</u>

George McCann, Assistant Director, Enforcement, DWR
Paul Kurisko, Chief, Industrial Waste Management, DWR
Frank Coolick, Chief, Bureau of Hazardous Engineering, DWM

H2

New Jersey Pollutant Discharge Elimination System

The New Jersey Department of Environmental Protection hereby restricts and controls the discharge of pollutants to waters of the State from the subject facility/activity in accordance with applicable laws and regulations. The permittee is responsible for complying with all terms and conditions of this authorization and agrees to said terms and conditions as a requirement for the construction, installation, modification or operation of any facility for the collection, treatment or discharge of any pollutant to waters of the State.

PERMIT NUMBER NJ0099104

Permittee	Co-Permittee
RADIO FREQUENCY LABORATORIES POWERVILLE ROAD BOOTON, NJ 07005	

Property Owner	Location of Activity
DOWTY RFL INDUSTRIES, INC. POWERVILLE ROAD BOONTON, NJ 07005	RADIO FREQUENCY LABORATORIES POWERVILLE ROAD BOOTON, NJ 07005

Type of Permit Covered By This Approval	Issuance Date	Effective Date	Expiration Date
I :Infilt/Perc. Lagoon - Ind.	2/29/88	3/29/88	3/28/93

By Authority of:
George G. McCann, P.E.
Director
Division of Water Resources

DEP AUTHORIZATION
Arnold Schiffman, Administrator
Water Quality Management

(Terms, conditions and provisions attached hereto)

State of New Jersey Department of Environmental Protection/Division of Water Resources

ATTACHMENT I

Let's protect our earth

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF AUTHORIZATION

PERMIT NO.	ISSUANCE DATE	EFFECTIVE DATE	EXPIRATION DATE
NJ0099104	11/6/84	12/15/84	12/14/87

ISSUED TO	FOR ACTIVITY/FACILITY AT	OWNER	
Dowty RFL Industries, Inc. Powerville Road Boonton, NJ 07005	Powerville Road Boonton Twp., Morris County Block 12, Lots 20 and 24	SAME AS APPLICANT	

ISSUING DIVISION	TYPE OF PERMIT	STATUTE(S)	APPLICATION NO.
☒ Water Resources ☐ Coastal Resources ☐ Environmental Quality	NJPDES INITIAL INTERIM PERMIT TO MONITOR GROUND WATER - IWMT	N.J.S.A. 58:10A-1 et seq. N.J.A.C. 7:14A-1 et seq.	N/A

A PERMIT TO implement closure and monitor the ground water quality surrounding a 0.1 acre infiltration/percolation lagoon which was used to dispose of process waste water generated from the manufacture of printed circuit boards and from surface finishing of aluminum and steel parts for a period of approximately ten years. All discharges to the lagoon ceased as of July 1, 1983.

BY AUTHORITY:
JOHN W. GASTON, JR., P.E.
DIRECTOR
DIVISION OF WATER RESOURCES

DEP AUTHORIZATION

Form DEP-008
7/80

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE ACTIVITY/FACILITY SITE.

ATTACHMENT J-I

CN 402
Trenton, N.J. 08625

0001

PERMIT

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

Permit No.	Issuance Date	Effective Date	Expiration Date
NJ0099104	11/6/84	12/15/84	12/14/87

Name and Address of Applicant	Location of Activity/Facility	Name and Address of Owner	
Dowty RFL Industries, Inc. Powerville Road Boonton, NJ 07005	Powerville Road Boonton Twp., Morris County Block 12, Lots 20 and 24	SAME AS APPLICANT	
Issuing Division	**Type of Permit**	**Statute(s)**	**Application No.**
WATER RESOURCES	INITIAL INTERIM NJPDES PERMIT TO MONITOR GROUND WATER - IWMF	N.J.S.A. 58:10A-1 et seq. N.J.A.C. 7:14A-1 et seq.	N/A

This permit requires Dowty RFL Industries, Inc. to monitor the ground water quality by operating and maintaining 4 ground water monitoring wells according to the specific and general conditions of this Initial Interim NJPDES Permit. The Initial Interim NJPDES Permit is intended to establish an adequate ground water monitoring program at the above named facility. This permit is only intended to obtain ground water data to evaluate the curren status and impact of this facility on ground water. It shall not be construed, nor is it intended to be an approval of any activity that the permittee has conducted which adversely effect the environment, ground or surface water quality, or threatens the public health, safety, or welfare.

The issuance of this Intial Interim Permit does not indicate that the Department has made a determination of the technical adequacy of the information available. Initial Interim permits shall not be construed as, nor are they intended to be, long-term approvals; these permits are of limited duration.

The data generated through the Initial Interim NJPDES Permit will be used by the Department to evaluate the current status and impact of existing facilities on ground water quality. It will also give the Department information to determine if there is any potential or actual threat to public health or safety or damage to the environment due to current or past practices. Based on the information generated by the issuance of this Permit, the Department may require the permittee to reduce the quantity of discharge, upgrade or install additional treatment, install additional monitor wells, conduct ground water decontamination procedures or cease discharges to waters of the State.

The issuance of this Initial Interim NJPDES Permit does not bind the Department to renew this Permit, nor does it relieve the permittee of the duty to submit additional information as specified in Chapters 6 and 10 of the NJPDES regulations at the time of application renewal or as may be required by the Department prior to permit renewal. Additionally, this Initial Interi NJPDES Permit does not relieve the permittee of any liabilities associated with public health or safety problems or environmental damage created as a result of the permittee's activities.

Documents attached hereto shall become part of this Permit.

Approved by the Department of Environmental Protection
BY AUTHORITY OF:
JOHN W. GASTON, JR., P.E.
DIRECTOR
DIVISION OF WATER RESOURCES

ARNOLD SCHIFFMAN, ADMINISTRATOR
WATER QUALITY MANAGEMENT

11/6/84
DATE

* *The word permit means "approval, certification, registration, etc."*

(GENERAL CONDITIONS ARE ON THE REVERSE SIDE.)

Form DEP-007 (8/83)

J2

New Jersey Department of Environmental Protection
Division of Water Resources
Ground Water Discharge Permits
CN-029
Trenton, N.J. 08625
(609) 292-0424

Public Notice

NOTICE: ISSUANCE OF DRAFT INITIAL INTERIM NJPDES PERMIT NJ0099104

Notice is hereby given of the Department's intent to issue:

Dowty RFL Industries,Inc.
Powerville Road
Boonton, NJ 07005

a draft Initial Interim IWMF New Jersey Pollutant Discharge Elimination System (NJPDES) permit to implement closure and monitor the ground water quality surrounding a 0.1 acre infiltration/percolation lagoon which was used to dispose of process waste water generated from the manufacture of printed circuit boards and from surface finishing of aluminum and steel parts for a period of approximately ten years. All discharges to the lagoon ceased as of July 1, 1983.

For an existing facility, issuance of the NJPDES permit is the enforcement mechanism by which pollutant discharges are brought into compliance with standards.

This notice is being given to inform the public that NJDEP has prepared a draft NJPDES permit. This draft permit contains conditions necessary to implement the provisions of the "Regulations Concerning the New Jersey Pollutant Discharge Elimination System" (N.J.A.C. 7:14A-1 et seq), which were promulgated pursuant to the authority of the New Jersey "Water Pollution Control Act" (N.J.S.A. 58:10A-1 et seq.).

The draft permit prepared by NJDEP is based on the administrative record which is on file at the offices of the NJDEP, Division of Water Resources, located at 1474 Prospect Street in the Township of Ewing, Mercer County, New Jersey. It is available for inspection, by appointment, between 8:30 a.m. and 4:00 p.m., Monday through Friday. Appointments for inspection may be scheduled by calling (609) 984-4428.

Interested persons may submit written comments on the draft permit to the Administrator, Water Quality Management, at the address cited above. All comments shall be submitted within 30 days of the date of this public notice. All persons, including applicants, who believe that any condition of this draft permit is inappropriate or that the Department's tentative decision to issue this draft permit is inappropriate, must raise all reason-

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ably ascertainable issues and submit all reasonably available arguments and factual grounds supporting their position, including all supporting material, by the close of the public comment period. All comments submitted by interested persons in response to this notice, within the time limit, will be considered by the NJDEP with respect to the permit application. At the close of the public comment period, the Department will issue or deny the permit. The Department will respond to all significant and timely comments when a final permit is issued. The applicant and each person who has submitted written comments will receive notice of NJDEP's final decision.

Any interested person may request in writing that NJDEP hold a nonadversarial public hearing on the draft permit. This request shall state the nature of the issues to be raised in the proposed hearing and shall be submitted within 30 days of the date of this public notice to the Administrator, Water Quality Management at the address cited above. A public hearing will be conducted whenever the NJDEP determines that there is a significant degree of public interest in the permit decision. If a public hearing is held, the public comment period in this notice shall automatically be extended to the close of the public hearing.

Arnold Schiffman
Administrator
Water Quality Management

WQM73/RB

J4

"GENERAL CONDITIONS FOR ALL NJPDES DISCHARGE PERMITS"

To Be Inserted Here.

The requirements for the following "fill-in-the-blank" items are as follows:

Section 16 - The plant operator shall have a N/A classification.

Section 26A -The permittee may request an exemption from the emergency plan report requirement within 6 months EDP.

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SPECIAL CONDITIONS FOR RFL INDUSTRIES, BOONTON, NJ/NJ0099104

A1. All floor drains throughout the facility which previously discharged to the lagoon shall be sealed within 30 days EDP.

A2. All surface water monitoring will continue in accordance with the Administrative Consent Order of July 15, 1983 between Dowty RFL Industries and NJDEP.

SPECIAL CONDITIONS FOR CLOSURE OF INDUSTRIAL WASTE MANAGEMENT FACILITIES

B1. The closure shall conform to N.J. Hazardous Waste Requirements, N.J.A.C. 7:26-1,4,7-12; specifically 7:26-9.5 Ground Water Monitoring System and 7:26-9.8 General Closure Requirements.

B2. The permittee shall follow the specifications of the "Closure Plan, RFL Industries, Inc. NJ0099104" dated Dec. 1,1983 (hereafter referred to as the "approved closure plan") with the following additional requirements and clarifications:

a. Waste Sampling and Categorization

All tests to be performed on water, sludge and soil samples shall be done in accordance with the requirements of DEP's Division of Waste Management, Bureau of Hazardous Waste Classification and Manifest (BHWCM) to determine whether the material is hazardous. The permittee shall send copies of any and all sample analyses and determinations made by the BHWCM as soon as they are available to the Division of Water Resources, Bureau of Ground Water Discharge Permits.

b. Free Standing Liquids

Three (3) samples shall be analyzed to determine whether the liquid in the lagoon is hazardous (according to the requirements of DEP's BHWCM). If the liquids are hazardous, they shall be removed to a State-approved TSD facility. If they are non-hazardous, they can be removed to a POTW for disposal. The liquids shall not be discharged to the "ground surface".

c. Waste Residues (Sludge)

Three (3) samples (as described in the approved closure plan) shall be analyzed to determine whether the sludge in the lagoon is hazardous (according to the requirements of DEP's BHWCM). All sludge in the lagoon must be removed to a TSD facility prior to closure and backfilling, whether it is hazardous or not. A suitable method to control free liquids during excavation and closure must be used by the permittee and/or his contractor. If the existing sludge in the lagoon cannot be made pumpable by resuspension or other means, then some type of sorbent must be applied to the sludge so that it can be removed as a solid to lined dump trucks or other water-tight

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containers.

d. Contaminated Soils

Three (3) core samples shall be taken from the lagoon bottom, at least one of which must be taken through the downgradient side of the dike/berm and underlying soils. The soils shall be tested and classified in accordance with the requirements of the BHWCM. If the soils prove to be non-hazardous, they can be left in place. If they are hazardous, they shall be removed to a TSD facility.

e. Equipment decontamination and final closure procedures shall be done as described in the approved closure plan.

f. Post closure maintenance shall consist of the care and renovation of the cover material as necessary to prevent erosion. The site shall be inspected monthly by facility personnel and repairs to the site shall be made as needed.

B3. The Department maintains the right to inspect the site during and after implementation of the approved closure plan at any reasonable time to assure compliance with permit conditions.

B4. The permittee shall submit a complete application for renewal of this permit 180 days prior to the expiration date of this permit.

B5. A New Jersey registered Professional Engineer shall inspect the final closure activities no less than once every two weeks and at the completion of all closure activities. All certifications shall be submitted to the Department within seven (7) days after completion and shall be addressed to:

NJDEP/Division of Water Resources
Bureau of Ground Water Discharge Permits
P.O. Box CN-029
Trenton, N.J. 08625

B6. Final closure of RFL's lagoon shall take place no later than Dec. 1, 1984.

B7. If State ground water quality standards or permit conditions are violated (specifically Table 3 of this permit) or a statistically significant difference between up and down gradient wells occurs, RFL shall submit a plan of remedial measures to be taken to remove the contamination. This plan

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shall be submitted within 60 days of the reported violation.

B8. Ground water monitoring shall be as specified in Table 3. Monitoring shall continue following closure for a period of not less than one year, or until ground water quality standards have been achieved in all monitor wells for a period of one year.

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TABLE 1

MONITORING PARAMETERS TO BE UTILIZED IN ESTABLISHING THE SUITABILITY OF THE GROUND WATER AS A DRINKING WATER SUPPLY

Parameter	Sampling Frequency
Arsenic (As)	Semi-annually
Barium (Ba)	Semi-annually
Cadmium (Cd)	Semi-annually
Chromium (Cr)	Quarterly
Fluoride (F)	Semi-annually
Lead (Pb)	Quarterly
Mercury (Hg)	Quarterly
Ammonium Nitrogen (NH_4-N)	Semi-annually
Nitrate Nitrogen (NO_3-N)	Quarterly
Silver (Ag)	Semi-annually
Iron (Fe)	Semi-annually
Sodium (Na)	Semi-annually
Sulfate (SO_4)	Semi-annually
Chloride (Cl)	Quarterly
Phenols	Semi-annually
Total Dissolved Solids	Quarterly
Total Volatile Organics by GC/MS Scan	Quarterly

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TABLE 2

MONITORING PARAMETERS TO BE UTILIZED
AS INDICATORS OF GROUND WATER CONTAMINATION

	Parameter	Sampling Frequency
1)	pH	Quarterly
2)	Specific Conductance	Quarterly
3)	Total Volatile Organics by GC/MS Scan	Quarterly

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Table 3 Ground Water Monitoring Requirements and Limitations for Initial Interim NJPDES Permits for Industrial Waste Management Facilities and Hazardous Waste Interim Status Facilities

The Permittee shall install and sample a total of 4 ground water monitoring wells according to the schedule below. All ground water elevations must be determined prior to pumping and sampling the ground water monitoring wells. Sampling of the ground water monitoring wells shall be performed according to the methodology specified in Section 6.12 of the NJPDES regulations and the Department's Field Procedures Manual for Water Data Acquisition. The Permittee shall sample for all parameters for which there is an "X" to the left of the parameter name. Sampling shall be performed during the months which are specified for that parameter.

	PARAMETER	LIMITATION		SAMPLING MONTH	SAMPLE TYPE	REPORTING MONTH
	Aldrin/Dieldrin	0.003	ppb	JanAprJulOct	Grab	FebMayAugNov
X	Ammonia Nitrogen	0.5	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Arsenic and Compounds	0.05	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Barium	1.0	ppm	JanAprJulOct	Grab	FebMayAugNov
	Benzidine	0.1	ppb	JanAprJulOct	Grab	FebMayAugNov
	Biochemical Oxygen Demand (BOD)	---	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Cadmium	0.01	ppm	JanAprJulOct	Grab	FebMayAugNov
	Calcium	---	ppm	JanAprJulOct	Grab	FebMayAugNov
	Chemical Oxygen Demand (COD)	---	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Chloride	250	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Chromium (Hex) & Compounds	0.05	ppm	JanAprJulOct	Grab	FebMayAugNov
	Coliform Bacteria	(1)		JanAprJulOct	Grab	FebMayAugNov
	Color	Unnoticeable		JanAprJulOct	Grab	FebMayAugNov
X	Copper	1.0	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Cyanide	0.2	ppm	JanAprJulOct	Grab	FebMayAugNov
	DDT & Metabolites	.001	ppb	JanAprJulOct	Grab	FebMayAugNov
	Endrin	0.004	ppb	JanAprJulOct	Grab	FebMayAugNov
	Fecal Coliform	(1)		JanAprJulOct	Grab	FebMayAugNov
X	Fluoride	2.0	ppm	JanAprJulOct	Grab	FebMayAugNov
	Foaming Agents	0.5	ppm	JanAprJulOct	Grab	FebMayAugNov
	Gross Alpha	15	pCi/l	JanAprJulOct	Grab	FebMayAugNov
	Gross Beta	4milrem/yr		JanAprJulOct	Grab	FebMayAugNov
	Hardness	---		ppm	JanAprJulOct	Grab	FebMayAugNov
X	Iron	0.3	ppm	JanAprJulOct	Grab	FebMayAugNov

	PARAMETER	LIMITATION		SAMPLING MONTH	SAMPLE TYPE	REPORTING MONTH
	Kjeldahl Nitrogen	---	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Lead and Compounds	0.05	ppm	JanAprJulOct	Grab	FebMayAugNov
	Lindane	4	ppb	JanAprJulOct	Grab	FebMayAugNov
	Magnesium	---	ppm	JanAprJulOct	Grab	FebMayAugNov
	Manganese	0.05	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Mercury and Compounds	0.002	ppm	JanAprJulOct	Grab	FebMayAugNov
	Methoxychlor	100	ppb	JanAprJulOct	Grab	FebMayAugNov
X	Nitrate Nitrogen (NO_3-N)	10	ppm	JanAprJulOct	Grab	FebMayAugNov
	Odor and Taste	Unnoticeable		JanAprJulOct	Grab	FebMayAugNov
	Oil and Grease	10	ppm	JanAprJulOct	Grab	FebMayAugNov
X	pH	5-9	SU	JanAprJulOct	Grab	FebMayAugNov
X	Phenols	0.3	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Phosphate, Total	---	ppm	JanAprJulOct	Grab	FebMayAugNov
	Polychlorinated Biphenyls (PCBs)	0.001	ppb	JanAprJulOct	Grab	FebMayAugNov
	Radionuclides	(2)		JanAprJulOct	Grab	FebMayAugNov
	Radium	5	pCi/l	JanAprJulOct	Grab	FebMayAugNov
	Selenium and Compounds	0.01	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Silver and Compounds	0.05	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Sodium	50	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Specific Conductance	(umho/cm)		JanAprJulOct	Grab	FebMayAugNov
X	Sulfate	250	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Total Dissolved Solids (TDS)	500	ppm	JanAprJulOct	Grab	FebMayAugNov
	Total Organic Carbon (TOC)	---	ppm	JanAprJulOct	Grab	FebMayAugNov
	Total Organic Halogen (TOH or TOX)	---	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Total Volatile Organics by GC/MS Scan (3)	50	ppb	JanAprJulOct	Grab	FebMayAugNov
	Toxaphene	5	ppb	JanAprJulOct	Grab	FebMayAugNov
	Turbidity	---	ppm	JanAprJulOct	Grab	FebMayAugNov
X	Zinc and Compounds	5	ppm	JanAprJulOct	Grab	FebMayAugNov
	2,4-D	100	ppb	JanAprJulOct	Grab	FebMayAugNov
	2,4,5-TP, Silvex	10	ppb	JanAprJulOct	Grab	FebMayAugNov

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PARAMETER	SAMPLING MONTH	REPORTING MONTH
X Elevation of top of Monitor Well Casing (to be determined once, but reported as indicated)	Jan Apr Jul Oct	Feb May Aug Nov
X Depth of Water Table from Top of Casing Prior to Sampling	Jan Apr Jul Oct	Feb May Aug Nov
X Depth to Water Table from Original Ground Level Prior to Sampling	Jan Apr Jul Oct	Feb May Aug Nov

Notes: (1) A. By membrane filtration, not to exceed four per 100 ml in more than one sample when less than 20 are examined per month, or B. by fermentation tube, with a standard 10 ml portion, not to be present in three or more portions in more than one sample when less than 20 are examined per month, or C. prevailing criteria adopted pursuant to the Federal Safe Drinking Water Act (PL 93-523).

(2) Prevailing regulations adopted by USEPA pursuant to Sections 1412, 1415, and 1450 of the Public Health Services Act as amended by the Safe Drinking Water Act (PL 93-523).

(3) GC/MS scan for volatile organics with a method limit of detection of 10 ppb or better for each substance. The concentration limit for specific volatile organic chemicals shall be that specified in Appendix F of the NJPDES regulations for the 10^{-5} Cancer Risk, but in no case shall the total concentration for all volatile organic chemicals exceed 50 ppb.

513

The Permittee shall complete the forms required on the "Monitoring Report - Transmittal Sheet" (Form T-VWX-014) which is included as a part of this Permit. Failure to submit sampling data on the forms required on the "Monitoring Report - Transmittal Sheet" shall be considered by the Department to be a violation of the Permit sampling requirements and may place the Permittee subject to civil and administrative penalties pursuant to N.J.S.A. 58:10A-10.

It shall be the Permittee's sole responsibility to maintain an adequate supply of the required report forms.

Satisfactory ground water monitoring wells are defined in Section 6.13 of the NJPDES regulations and shall be subject to Departmental approval. If ground water monitoring wells do not meet these standards, they must be replaced with new wells meeting Departmental standards.

A Ground Water Monitoring Well Certification (Forms A and B) shall be completed for each existing and proposed ground water monitoring well. Information for each well must be shown on a separate form. For an existing well, if information required on the Ground Water Monitoring Certification (Forms A and B) cannot be determined or the ground water monitoring well is not adequately constructed to meet the requirements of this Permit, the Department reserves the right to require a replacement well. Criteria to be used by the Department in judging the adequacy of a well will be related to the ability of the well to provide a representative ground water sample at any time of the year as specified by the Permit. Any replacement well must be installed within a 10 foot radius of the existing well. Inadequate or damaged existing wells must be properly sealed pursuant to N.J.A.C. 58:4A-4.1. Instructions regarding sealing may be obtained by contacting the Water Allocation Office (609-984-6831).

APPENDIX A

The permittee must use the Student's t-test to determine statistically significant changes in the concentration or value of an indicator parameter in periodic ground water samples when compared to the initial background concentration or value of that indicator parameter. The comparison must consider individually each of the wells in the monitoring system. For three of the indicator parameters (specific conductance, total organic carbon, and total organic halogen), a single-tailed Student's t-test must be used to test at the 0.01 level of significance for significant increases over background. The difference test for pH must be a two-tailed Student's t-test at the overall 0.01 level of significance.

The Student's t-test involves calculation of the value of t-statistic for each comparison of the mean (average) concentration or value (based on a minimum of four replicate measurements) of an indicator parameter with its initial background concentration or value. The calculated value of the t-statistic must then be compared to the value of the t-statistic found in a table for t-test of significance at the specified level of significance. A calculated value of t which exceeds the value of t found in the table indicates a statistically significant change in the concentration or value of the indicator parameter.

Formulae for calculation of the t-statistic and table for t-test of significance can be found in most introductory statistics texts.

J15

6.12 Ground-water Sampling Procedures

To ensure a representative sample from a monitor well or a potable well, flushing or pumping is almost always required. In general, the ground-water standing in the well casing at the time of sample collection will be similar in quality to that in the surrounding aquifer or local groundwater, but it may not be representative. Accordingly, the well should be pumped (or bailed) prior to collecting a sample whenever possible.

For pump samples, a volume of water equal to three times that standing in the casing should be pumped from the well before taking the sample. Overpumping, which can result in dilution of the samples should be avoided. Depending on the geology, well design and other factors, some monitor wells will have a low yield. In such cases, the standing water should be evacuated and a sample collected upon recovery. Wells with relatively high yield can be sampled immediately after evacuation or bailing.

A pumping well will yield samples which incorporate water drawn from a volume adjacent to the well bore at the depth of the sampling tube orifice if the well is screened at that depth. Otherwise, the sample will represent water entering the well bore at the bottom of the casing or at the nearest screened interval. Therefore, these sampling configurations can preclude water quality information with depth and, since the pumped samples are obtained form a volume adjacent to the well bore, dilution or concentration of the samples can occur as the well continues to be pumped. In these instances, grab samples are preferred over pumped samples.

If a monitoring well is sampled using a bailer, the standing water in the well should be bailed repeatedly until at least one (and preferably three) times the water volume standing in the well casing have been exchanged prior to sample collection.

Depth-to-water should be measured prior to sampling using a calibrated steel tape.

If surface pumps or hoses are used, the end of the hose must be at a sufficient depth that suction will not be broken as the level of water in the monitoring well is drawn down. However, the hose must be kept above the bottom so that sediments or solids will not be entrained and sample turbidity increased. Poorly-developed monitor wells may also promote increased turbidity. Bedrock wells are less likely to present problems of induced turbidity upon sampling than are wells screened in unconsolidated materials.

For those water quality parameters not subject to chemical change within a well casing in contact with the atmosphere, a pump sample may not be necessary (e.g. nitrate (NO_3)). However, in the case of volatile organics (e.g. benzene, trichlorethylene, toluene), concentrations can decrease for water standing in the well. Therefore, samples for volatile organics should be collected from depths several feet below the water level. If grab samples are taken for volatile organic analyses, methyl alcohol and distilled water should be used to thoroughly clean the sampler prior to reuse. The sampler should be washed first with the alcohol, then rinsed with distilled water; the alcohol must be allowed to volatilize before resuming sampling.

When sampling is done from a pump discharge, the flow rate should be reduced to a trickle to minimize agitation of the water and resulting loss of volatile compounds. When sampling for low levels of volatiles, care must be taken as to the source of water used in priming a centrifugal pump.

If several wells are to be sampled for volatiles, the least contaminated wells should be sampled first and the remaining wells sampled in order of increasing contamination. If the relative levels of contamination are unknown, clean water should be used to purge the pump following each well sampled in order to minimize cross-contamination of samples.

J16

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
TRENTON, NEW JERSEY 08625

JOHN W. GASTON JR., P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

OCT 23 1984

Mr. Jeffrey Duncan, P.E.
Ground/Water Technology, Inc.
100 Ford Rd., Suite C-5
Denville, N.J. 07834

Re: Draft Initial Interim Permit NJ0099074

Dear Mr. Duncan:

The Department has received your letter of Aug. 10, 1984 to Mr. Arnold Schiffman, Administrator regarding the above referenced permit for Dowty RFL Industries, Inc. in Boonton, N.J.

The following responses refer to each of your specific comments on the draft permit:

Page "R" and Page "S"

The monitoring of ground water samples for the presence of Barium, Mercury and Silver will remain in the final permit. Although these metals are relatively insoluble, they are leachable under some circumstances. These parameters are considered to be an integral part of background water quality. Sampling frequencies for these parameters was limited to a semi-annual basis because these parameters are not expected to be present in significant quantities in wastewater at a facility of this nature.

Page "T"

Acrolein and Acrylonitrile will be deleted from the ground water reporting forms.

TABLE 3 - GROUND WATER MONITORING REQUIREMENTS and LIMITATIONS

Page 2

GC/MS for Total Volatile Organics is required for all NJPDES permittees, particularly when the presence of organics is well confirmed. The requirement for GC/MS will be retained in the final permit.

Special Conditions for RFL Industries

B. (1) b. Once the lagoon sample results for liquid, sludge and soil samples (as specified in the draft permit) have been submitted to the Bureau of Ground Water Discharge Permits (BGWDP) and have been classified by the Division of Waste Management, Bureau of Hazardous Waste Classification and Manifest, the BGWDP will make a determination as to which disposal methods will be allowed for the liquid, sludge and soil in the lagoon.

J17

B. (1) c. There are several reasons for removing all of the sludge in the lagoon:

1) The sludge will act as a source for future ground water contamination. Although the sludge may pass an EP Toxicity test, it may still contain quantities of hazardous and non-hazardous materials which are far in excess of ground water standards.

2) There are several potable private wells in close proximity to this facility. some of which may already be contaminated. Although the source (s) of this contamination could be one or all of the local manufacturing facilities, removal of the lagoon sludge would provide RFL with some degree of protection against further contamination.

3) The ground water monitoring requirement of not less than one year (Special Condition B8) was determined based on all of the sludge being removed. This monitoring period would have to be extended for several years if the sludge were to remain.

4) In order for Dowty RFL to leave the sludge within the lagoon at closure it would be necessary for Dowty RFL to obtain a permit to landfill from the Division of Waste Management. The New Jersey Solid Waste Management Act (N.J.S.A. 13:1E - 1 et seq.) requires that any material destined for ultimate disposal be implaced only under the auspices of a valid landfill permit.

Special Condition B8

This condition shall remain in the final permit The number and frequency of parameters required by this permit are minimal for a RCRA facility.

As for the dedication of financial resources, once the lagoon closure has been completed, certified by a N.J. Professional Engineer and approved by the BGWDP, the financial assurance requirements of RCRA will no longer be in effect.

If you have any further questions on closure requirements or the final permit, please call Melinda Dower at (609) 292-0424.

Sincerely,

Original Signed and Mailed
John J. Trela, Ph.D, Chief
Bureau Ground Water Discharge Permits

WQM129:bem

cc: Jack Slater, RFL Industries
Greg Cunningham, DEP Enforcement
Ben Esterman, Div. of Waste Mgt.

J18

SUBMITTALS REQUIRED BY
NJPDES PERMIT NO. NJ0099104
DOWTY RFL INDUSTRIES, INC.
BOONTON, NEW JERSEY

Prepared by

GROUND/WATER TECHNOLOGY, INC.
100 Ford Road
Denville, New Jersey 07834

January 14, 1985

G/WT File 83512

ATTACHMENT KIA

The following attachments have been prepared by Ground/Water Technology for DOWTY RFL Industries (RFL) as a response to submittals required under their NJPDES Permit No. NJ0099104. These attachments are as follows:

Attachment	Required Submittal	Permit Section
A	Monitor Well Certifications A & B	1.3
B	Ground Water Monitoring Program	2.1
C	Outline GWQAP	2.5
D	Background Concentration Summary	2.6
E	GWQAP Status Report	2.8
F	General Site Plan	3.1
G	Final Schedule for Closure	B6

KIB

ATTACHMENT A

MONITOR WELL CERTIFICATION FORMS A & B

Monitor Well MW-1

Monitor Well MW-2

Monitor Well MW-3

Monitor Well MW-4

Revised 3/18/85

ATTACHMENT KIC

(One for must be completed for each we)

Name of Permittee: DOWTY RFL Industries, Inc.
Name of Facility:
Location: Powerville Road, Boonton, NJ 07005

NJPDES Permit No: NJ 0099104

CERTIFICATION

Well Permit Number (As assigned by NJDEP's Well Drilling Perits Section (609 - 984-6831)):	2 5-2 1 3 4 2-3
Owner's Well Number (As shown on the application or plans):	MW#1
Well Completion Date:	June 10, 1980
Distance from Top of Casing (cap off) to ground surface (one-hundredth of a foot):	2.83'
Total Depth of Well (one-hundredth of a foot):	29'
Depth to Top of Screen From Top of Casing (one-hundredth of a foot):	11.05'
Screen Length (feet):	20'
Screen or Slot Size:	20 Slot 2" diam.
Screen or Slot Material:	PVC
Casing Material: (PVC, Steel or Other-Specify):	PVC
Casing Diameter (Inches):	2"
Static Water Level From Top of Casing at The Time of Installation (one-hundredth of a foot):	7.45' on 6/23/80
Yield (Gallons per Minute):	38 GPM on 6/23/80
Length of time Well Pumped or Bailed	? Hours ? Minutes
Lithologic Log:	ATTACH

AUTHENTICATION

I certify under penalty of law that, where applicable, I meet the requirements as specified on the reverse of this page, that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

GARY J. CLUEN
NAME (TYPE OR PRINT)

Gary J. Cluen
SIGNATURE

A.I.H. Certification
#412 P. Hydrogeologist
CERTIFICATION OR LICENSE NUMBER

SEAL

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

JACK E SLATER
NAME (TYPE OR PRINT)

Jack E Slater
SIGNATURE

KID

FACILITY MGR
TITLE

2/2/85

Date 6/10/80

MORETRENCH AMERICAN WELL REPORT

Rig No.: 415

Contractor: RFL Industries, Inc.

Job No.: 1-3052

Job Address: Powerville Rd., Boonton, N.J. 07005

Driller

Job Phone: None

Comments: State Permit No. 25-21342

Branch No.: Rockaway, New Jersey

No. of wells installed today: Well No: one

Depth of hole: 29'

Dia of borehole: 6"

Length of well: ----

Dia. of well: 2"

Length of screen: 20'

Type, dia., slot of screen: P.V.C. 20 slot, 2" diameter

Well yield: ----

Revert used: 1/2 bag

Total footage drilled today: -----

Hours Regular:

Overtime:

Hours:

Delays—Explain:

Mileage:

State:

WELL LOG

Depth	Formation	Depth	Formation
0'-5'	Coarse sand and med. sand	Screen	installed from 9' to 29'
5'-14'	Fine to med. sand angular		
	some silt.		
14'-20'	Same as above.		
20'-30'	Coarse to very coarse	#3 Mori	filter gravel
	Small percent of fine to	1 bag b	entonite
	med. sand.	1 box b	entonite pellets
[illegible]	tested 6/23/80		35 GPM
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		
[illegible]	KIE		

[illegible]

Driller

Name of Permittee: DOWT RFL Industries, Inc.
Name of Facility:
Location: Powerville Road, Boonton, NJ 07005

NJPDES Permit No: NJ 0099104

CERTIFICATION

Well Permit Number (As assigned by NJDEP's Well Drilling Perits Section (609 - 984-6831)):	25-213 44-0
Owner's Well Number (As shown on the application or plans):	MW#3
Well Completion Date:	June 10, 1980
Distance from Top of Casing (cap off) to ground surface (one-hundredth of a foot):	2.66'
Total Depth of Well (one-hundredth of a foot):	27'
Depth to Top of Screen From Top of Casing (one-hundredth of a foot):	9.30'
Screen Length (feet):	20'
Screen or Slot Size:	20 Slot 2" diam.
Screen or Slot Material:	PVC
Casing Material: (PVC, Steel or Other-Specify):	PVC
Casing Diameter (Inches):	2"
Static Water Level From Top of Casing at The Time of Installation (one-hundredth of a foot):	5.09' on 6/24/80
Yield (Gallons per Minute):	20 GPM on 6/24/80
Length of time Well Pumped or Bailed	? Hours ? Minutes
Lithologic Log:	ATTACH

AUTHENTICATION

I certify under penalty of law that, where applicable, I meet the requirements as specified on the reverse of this page, that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

GARY J. CLUEN — Gary J. Cluen
NAME (TYPE OR PRINT) — SIGNATURE

A.I.H. Certification
#412 P. Hydrogeologist
CERTIFICATION OR LICENSE NUMBER

SEAL

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

Jack E Sutter — Jack E Sutter
NAME (TYPE OR PRINT) — SIGNATURE

KIF

Date 6/10/80

MORETRENCH AMERICAN WELL REPORT

Rig No.: 415

Contractor: RFL Industries, Inc.

Job No.: [illegible] 1-3052

Job Address: Powerville Rd., Boonton, N.J. 07005

Driller: Earl Hawe

Job Phone: None

Comments: State Permit No. 25-21344

Branch No.: Rockaway, New Jersey

No. of Wells installed today: Well No. three

Depth of hole: 30'

Dia of borehole: 6"

Length of well: ----

Dia. of well: 2"

Length of screen: 20'

Type, dia., slot of screen: P.V.C. 20 slot, 2" diameter

Well yield: not tested

Revert used: 1/2 bag

Total footage drilled today: ----

Hours Regular:

Overtime:

Delays—Explain:

Hours:

Mileage:

State:

WELL LOG

Depth	Formation	Depth	Formation
0' - 15'	Silty Sand		
	(Sand fine to med)	Screen ins	talled from 7' to 27' depth.
15' - 20'	Sand Silt		
20' - 30'	Sand (coarse to very coarse	#3 Morie f	ilter gravel installed
		1 bag bent	onite
	Clean just a small percent	1 box bent	onite pellets
	of silt.		
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		
	KIG		

[illegible]

Driller

Name of Permittee: DOWTY RFL Industries, Inc.
Name of Facility:
Location: Powerville Road, Boonton, NJ 07005

NJPDES Permit No: NJ 0099104

CERTIFICATION

Well Permit Number (As assigned by NJDEP's Well Drilling Perits Section (609 - 984-6831)):	2 5 - 2 1 3 4 3 - 1
Owner's Well Number (As shown on the application or plans):	MW#2
Well Completion Date:	June 11, 1980
Distance from Top of Casing (cap off) to ground surface (one-hundredth of a foot):	2.50'
Total Depth of Well (one-hundredth of a foot):	22'
Depth to Top of Screen From Top of Casing (one-hundredth of a foot):	4.50'
Screen Length (feet):	20'
Screen or Slot Size:	20 Slot 2" diam.
Screen or Slot Material:	PVC
Casing Material: (PVC, Steel or Other-Specify):	PVC
Casing Diameter (Inches):	2"
Static Water Level From Top of Casing at The Time of Installation (one-hundredth of a foot):	5.09' on 6/24/80
Yield (Gallons per Minute):	20 GPM on 6/24/80
Length of time Well Pumped or Bailed	? Hours ? Minutes
Lithologic Log:	ATTACH

AUTHENTICATION

I certify under penalty of law that, where applicable, I meet the requirements as specified on the reverse of this page, that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

GARY J. CLUEN
NAME (TYPE OR PRINT)

Gary J. Cluen
SIGNATURE

A.I.H. Certification
#412 P. Hydrogeologist
CERTIFICATION OR LICENSE NUMBER

SEAL

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

JACK E. SLATER
NAME (TYPE OR PRINT)

Jack E. Slater
SIGNATURE

KIH

FACILITY MGR.
TITLE

2/22/05
DATE

Date 6/11/80

MORETRENCH AMERICAN WELL REPORT

Rig No.: 415

Contractor: RFL Industries, Inc.

Job No.: 1-3052

Job Address: Powerville Rd., Boonton, N.J. 07005

Driller:

Job Phone: None

Comments: State Permit No. 25-21343

Branch No.: Rockaway, New Jersey

No. of wells installed today: Well No. two

Depth of hole: 26'

Dia of borehole: 6"

Length of well: ----

Dia. of well: 2"

Length of screen: 20'

Type, dia., slot of screen: P.V.C. 20 slot, 2" diameter

Well yield: ----

Revert used: 1/2 bag

Hours Regular:

Total footage drilled today: ----

Overtime:

Delays—Explain:

Hours:

Mileage:

State:

WELL LOG

Depth	Formation	Depth	Formation
0 - 10	Cobbles, gray fine to med	Screen in	stalled from 2' to 22'
	sand, cobbles near surface		
10 - 25	Med to coarse tan sand	#3 Morie	filter gravel
	very coarse sand 0.25', some	1 bag be	ntonite
	pea gravel 1-5 mm.	1 box be	ntonite pellets
26'	Rock - sloping to east		
[illegible]	[illegible] 6/11/80	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		
	KII		

[illegible]

Driller

Name of Permittee: DOWTY [illegible]L Industries, Inc.
Name of Facility:
Location: Powerville Road, Boonton, NJ 07005

NJPDES Permit No: NJ 0099104

CERTIFICATION

Well Permit Number (As assigned by NJDEP's Well Drilling Perits Section (609 - 984-6831)):	2 5-2 3 8 9 4-9
Owner's Well Number (As shown on the application or plans):	MW#4
Well Completion Date:	August 18, 1983
Distance from Top of Casing (cap off) to ground surface (one-hundredth of a foot):	1.08'
Total Depth of Well (one-hundredth of a foot):	23.67
Depth to Top of Screen From Top of Casing (one-hundredth of a foot):	5'
Screen Length (feet):	20'
Screen or Slot Size:	20 Slot 2" diam.
Screen or Slot Material:	PVC
Casing Material: (PVC, Steel or Other-Specify):	PVC
Casing Diameter (Inches):	2"
Static Water Level From Top of Casing at The Time of Installation (one-hundredth of a foot):	
Yield (Gallons per Minute):	2+ GPM 8/19/83
Length of time Well Pumped or Bailed	3 Hours Minutes
Lithologic Log:	ATTACH

AUTHENTICATION

I certify under penalty of law that, where applicable, I meet the requirements as specified on the reverse of this page, that I have personally examined and am familiar with the information submitted in this document and all attachments, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

GARY J. CLUEN — Gary J. Cluen
NAME (TYPE OR PRINT) — SIGNATURE

A.I.H. Certification
#412 P. Hydrogeologist
CERTIFICATION OR LICENSE NUMBER — SEAL

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

JACK E SLATER — Jack E Slater
NAME (TYPE OR PRINT) — SIGNATURE

KIJ Facility Mgr — 2/27/85
TITLE — DATE

Date 8/18/83

MORETRENCH AMERICAN WELL REPORT

Rig No.: 0415

Contractor: Ground Water Tech

Job No.: 1-4311

Job Address: RFL Industries

Date: 8/18/83

Job Phone:

Comments:

Branch No.: -1-

No. of wells installed today: one

Depth of hole: 25'6"

Dia of borehole: 8"

Length of well: 25'

Dia. of well: 2"

Length of screen: 20' 20'

Type, dia., slot of screen PVC 2" .020 slot

Well yield: 2 + GPM

Travel Hours one

Stand by Hours

Revert used:

Man Hours Regular: seven

Drill Hours Reg.: seven

Total footage drilled today: 25'6"

Overtime:

O.T.:

Delays—Explain:

Delay Hours:

20' - 2" screen PVC 5' Pipe PVC

6 bags #1 gravel 5' - 4" Protective casing with lock

2 bags grout 25 lbs. Bentonite pellets

Mileage				
State				

Fuel Supplied By: (check one)

☐ Driller

☐ Contractor

WELL LOG

Depth	Formation	Depth	Formation
0 - 2'	clay		
2 - 6'	coarse sand & gravel		
6 - 19'	fine sand		
19 - 23'	medium sand, some gravel		
23 - 25'6	coarse sand & gravel with		
	cobbles.		
	refusal at 25'6"		
NOTE:	DEVELOPED WELL FOR THREE HOURS ON 8/19/83.		

KIK

W.Watters,

Driller

James W. Bausch, P.E., L.S.

13 HILLCREST ROAD

TOWACO, NEW JERSEY 07082

(201) - 334-6003

LETTER OF TRANSMITTAL

DATE: Feb. 28, 1985

ATTEN: Jack Slater

PROJECT No. 6-5-80

SENT TO: Dowty R.F.L. Industries, Inc.

ADDRESS: Powerville Road
Boonton, New Jersey 07005

DELIVERED ______ MAILED X LETTER X

PRINTS ______ ORIGINALS ______

quantity		date	description
1 ea.		2/28/85	Longitudes and Latitudes of Monitoring wells as
			requested.

COMMENTS: Values obtained were scaled from U.S.G.S. Boonton Quadrangle Map as per instructions from Melinda Dower N.J.D.E.P. Bureau of Groundwater Discharge Permits.

SIGNED BY: Maureen Easton

KIL

THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION CERTIFICATION

Name of Permittee: DOWTY RFL INDUSTRIES INC.
Name of Facility: DOWTY RFL INDUSTRIES INC
Location: POWERVILLE RD.
BOONTON N.J. 07005
NJPDES Permit No: NJ 0 0 9 9 1 0 4

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, 609-984-6831): This number must be permanently affixed to the well casing. 25 - 23894 - 9

Longitude (one-hundredth of a second): West 74 / 25 / 30 / 2
Latitude (one-hundredth of a second): North 40 / 55 / 44 / 8
Elevation of Top of Casing (cap off) (one-hundredth of a foot): 512 - 66 (9/11/93)
Owners Well Number (As shown on the application or plans): MW #4

Note - Longitude & Latitude Values scaled from U.S.G.S. Boonton Quadrangle, 7.5 Minute series, 1954, photo revised 1981.

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Mark W. Bausch
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

#27483
PROFESSIONAL LAND SURVEYOR'S LICENSE #

WQM111-A/GWM3:lml

KIM

THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION CERTIFICATION

Name of Permittee: DOWTY REL INDUSTRIES INC.
Name of Facility: DOWTY REL INDUSTRIES INC.
Location: POWERVILLE RD.
BOONTON, N.J. 07005
NJPDES Permit No: NJ 0 0 9 4 1 0 4

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, 609-984-6831): This number must be permanently affixed to the well casing. 25 - 21344 - 0

Longitude (one-hundredth of a second): West 74 / 25 / 29 / 8
Latitude (one-hundredth of a second): North 40 / 55 / 47 / 1
Elevation of Top of Casing (cap off) (one-hundredth of a foot): 515 - 43 (9/19/93)
Owners Well Number (As shown on the application or plans): MW #3

Note - Longitude & Latitude Values scaled from U.S.G.S. Boonton Quadrangle, 7.5 Minute series, 1954, photo revised 1981.

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Mark W. Bausch
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

#27483
PROFESSIONAL LAND SURVEYOR'S LICENSE #

WQM111-A/GWM3:lml

KIN

THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION CERTIFICATION

Name of Permittee: DOWTY RFL INDUSTRIES INC.

Name of Facility: DOWTY RFL INDUSTRIES IN.

Location: POWERVILLE RD.
BOONTON, N.J. 07005

NJPDES Permit No: NJ 0 0 9 9 1 4 4

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, 609-984-6831): This number must be permanently affixed to the well casing. 25 - 21343 - 1

Longitude (one-hundredth of a second): West 74 / 25 / 28 / 4

Latitude (one-hundredth of a second): North 40 / 55 / 48 / 0

Elevation of Top of Casing (cap off) (one-hundredth of a foot): 516 . 39 (9/10/83)

Owners Well Number (As shown on the application or plans): MW #2

Note - Longitude & Latitude Values scaled from U.S.G.S. Boonton Quadrangle, 7.5 Minute series, 1954, photo revised 1981.

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Mark W. Bausch

PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

#27483

PROFESSIONAL LAND SURVEYOR'S LICENSE #

OM111-A/GWM3:lml

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THIS FORM MUST B COMPLETED BY THE PERMITT OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION CERTIFICATIC

Name of Permittee: DAWTY REL INDUSTRIES, INC.
Name of Facility: DAWTY REL INDUSTRIES, INC.
Location: POWERVILLE RD, BOONTON, N.J. 07005

NJPDES Permit No: NJ 0 0 9 9 1 0 4

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Water Allocation Section, 609-984-6831): 25-21342-3
This number must be permanently affixed to the well casing.

Longitude (one-hundredth of a second): West 74 / 25 / 29 / 4
Latitude (one-hundredth of a second): North 40 / 55 / 49 / 7
Elevation of Top of Casing (cap off) (one-hundredth of a foot): 512.98 (9/19/83)
Owners Well Number (As shown on the application or plans): MW #1

Note - Longitude & Latitude Values scaled from U.S.G.S. Boonton Quadrangle Map 7.5 minute series, 1954, photo revised 1981.

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

[signature]
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Mark W. Bausch
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

#27483
PROFESSIONAL LAND SURVEYOR'S LICENSE #

WQM111-A/GWM3:lml

KIP

ATTACHMENT E

GROUND WATER QUALITY ASSESSMENT PROGRAM

STATUS REPORT

ATTACHMENT K2A

GROUND WATER QUALITY ASSESSMENT PROGRAM

1. INTRODUCTION AND BACKGROUND

The evaporation pond at DOWTY RFL Industries was initially investigated by the NJDEP. Their study began by sampling the discharge water being released to the evaporation pond, and finding it high in metals content. Although the pond is reportedly constructed with a clay lining, it was felt that some of the discharge could be infiltrating the ground water below the lagoon. RFL began to make changes in their plating operations in an effort to reduce the quantity of the discharge flow and also to reduce the concentrations of metals, especially lead and copper, in the water released.

In order to investigate whether the ground water had been contaminated, three monitor wells were installed around the pond in June of 1980. These wells were designated as MW-1, MW-2 and MW-3; and their locations are shown on the General Site Plan in Attachment F. Water samples were collected from these wells during 1980 and 1981, and they indicated that some contamination by volatile organics was present in the ground waters around the evaporation pond.

RFL was then directed to retain the services of a ground water consulting firm to address the extent, direction of migration and concentrations of contamination around the lagoon. Ground/Water Technology was retained by RFL for this purpose in December 1981.

K2B

A preliminary evaluation of the site was made and a letter report was issued on February 18, 1982. The preliminary conclusions were that the apparent ground water flow direction was from the pond toward the unnamed stream which drains from the RFL fire pond. As a result of the contamination that was found in wells MW-2 and MW-3, recommendations for a monitoring program to evaluate the problem in more detail were proposed. A regular monitoring schedule was initiated and data from these efforts are summarized in Attachment D.

RFL has stopped all discharges to the pond as of July 1, 1983. In order to comply with RCRA regulations, a fourth monitoring well was installed further downstream from the pond. This well was installed on August 18, 1983, and designated MW-4. Its location is also shown on the General Site Plan given in Attachment F.

Results of the monitoring program indicate that contamination by volatile organics has spread to monitoring wells MW-2 and MW-3 but has not reached MW-4. Concentrations in MW-2 have varied between 10 and 1653 ppb since July 1982. In MW-3 the concentrations have varied between 0 and 173.5 ppb with a trend towardlower readings with time. Volatile organics which entered the stream had concentrations of between 1.7 and 196.7 ppb at a point approximately 300 feet downstream of the evaporation pond but have not been detected since after the first sampling at

K2C

Valley Road on May 12, 1983. Results of that first sampling showed only 10.4 ppb.

Since contamination had already been found, RFL Industries assumed that the indicator parameters, as required under detection monitoring, would already show significant increases or decreases (in the case of pH) when evaluated under 40 CFR 265.93 (b) and; therefore, in cooperation with NJDEP they initiated an alternative ground water monitoring program as was allowed under the regulations. (Refer to our letter of 9/9/83 to Mr. Karl Vetter of NJDEP.)

Ground water quality has been monitored on roughly a quarterly basis since 1982. As a response to cleaning up the area, RFL had submitted a final draft closure plan for the pond in December 1983. Action has been delayed in implementing the closure plan since final approval of the plan was only given by NJDEP in NJPDES Permit No.NJ0099104 with an effective date of December 15, 1984. Pond closure is now anticipated to begin in the Spring of 1985. Once the source of contamination is removed, it is anticipated that any remaining contamination in the ground water will purge itself into the adjacent stream. The stream has been monitored in two locations since May 12, 1983; at points approximately 300 feet and 2000 feet downstream of the pond. Indications are that the contamination which enters the stream is purged with distance and would not present a threat to health.

K2D

2. MONITORING PROGRAM

Under the final NJPDES permit, DOWTY RFL Industries is required to continue monitoring water quality on a quarterly basis until a minimum of one year after closure of the pond or until ground water quality standards have been achieved in all four monitor wells for a period of one year. The Ground Water Monitoring Program has been enclosed as Attachment B.

Monitoring will be performed on each of the four monitoring wells, upstream at the inlet to the fire pond, downstream about 300 feet from the pond and downstream at Valley Road (about 2000 feet from the pond). Samples of the water in the evaporation pond will also be analyzed up until closure.

3. POND CLOSURE

The evaporation pond will be removed in accordance with the approved closure plan and Special Conditions B1 through B10. The anticipated schedule for closure is during the Spring of 1985 as stated in Attachment G.

4. POST CLOSURE

Monitoring of the four monitor wells and three surface water sites will continue until ground water quality standards are achieved. Should ground water quality not be improving with time, it may be necessary to implement secondary aquifer decontamination measures. Such measures would be recommended, as the need arises, for approval by NJDEP prior to implementation.

K2E

5. CERTIFICATION

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly certified Professional Hydrogeologist, under the rules and regulations of the American Institute of Hydrology.

Gary J. Cluen

Gary J. Cluen, Professional Hydrogeologist

Certificate No. 412

Certified by: American Institute of Hydrology

K2F

ATTACHMENT G

FINAL SCHEDULE FOR CLOSURE

ATTACHMENT K3A

LAGOON CLOSURE SCHEDULE

Item	Completion Date
1. Bid Package Preparation (4 weeks)	2/15/85
2. Review by RFL & NJDEP for Approval (2 weeks)	3/1/85
3. Bids Received from Contractors (2 weeks)	3/15/85
4. Notice to Proceed Issued (2 weeks)	4/1/85
5. Start of Closures (2 weeks)	4/15/85
6. Closure Complete (8 weeks est.)	6/7/85 est.

K3B

TOM TACCONE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

In the Matter of R.F.L. INDUSTRIES NJD002156677 (Boonton, New Jersey) Respondent. Proceeding Under Section 3008 of the Solid Waste Disposal Act, as amended.	<u>COMPLAINT, COMPLIANCE ORDER, AND NOTICE OF OPPORTUNITY FOR HEARING</u> Docket No. II RCRA-82-0108

NEW YORK, N.Y. 10007

COMPLAINT

This administrative proceeding is instituted pursuant to Section 3008 of the Solid Waste Disposal Act, as amended, 42 U.S.C. §6901 <u>et seq</u>. ("the Act"). [Note: Among the statutes amending the Act is the Resource Conservation and Recovery Act, 90 Stat. 2795, P.L. 94-580 (1976).]

The Director of the Enforcement Division of the U.S. Environmental Protection Agency ("EPA"), Region II, Complainant in this proceeding, has determined that Respondent, R.F.L. Industries, has violated Section 3002 of the Act, 42 U.S.C. §6922, and the regulations promulgated thereunder, as hereinafter specified:

1. Respondent owns and operates a facility located at Powerville Road, Boonton, New Jersey.

2. By notification dated July 24, 1980, Respondent informed EPA that it conducts activities at the facility involving "hazardous waste," as that term is defined in Section 1004(5) of the Act, 42 U.S.C. §6904(5) and in 40 CFR §261.3. By application dated February 2, 1981, Respondent requested a permit to conduct its hazardous waste activities.

3. On or about October 15, 1981, an inspection of the facility was conducted by duly-designated employees of EPA pursuant to Section 3007 of the Act, 42 U.S.C. §6927. Said inspection was conducted for the purpose of enforcing the EPA regulations for hazardous waste management, 40 CFR Parts 260 through 265 (published in 45 <u>Fed</u>. <u>Reg</u>. 33063 <u>et seq</u>., May 19, 1980 and as later amended), promulgated pursuant to Subtitle C of the Act, 42 U.S.C. §6921 <u>et seq</u>.

ATTACHMENT L

4. The above-referenced inspection revealed that Respondent's facility was being used for the generation and storage of hazardous waste, including spent acids.

5. 40 CFR Part 265 sets standards for all hazardous waste storage facilities.

6. 40 CFR §265.31 requires that a hazardous waste treatment, storage, or disposal facility be maintained and operated in a manner designed to minimize the possibility of any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the environment. At the time of the above-referenced inspection, 5-6 leaking and/or corroded drums of hazardous waste were stored on the ground surrounded by evidence of spills. Respondent was therefore in violation of 40 CFR §265.31.

PROPOSED CIVIL PENALTY

In view of the above-cited violations, and pursuant to the authority of Section 3008 of the Act, Complainant herewith proposes the assessment of a civil penalty in the amount of six thousand five hundred dollars ($6,500) against R.F.L. Industries for the violation specified hereinabove.

COMPLIANCE ORDER

Based upon the foregoing, and pursuant to the autho[illegible]ty of Section 3008 of the Act, Complainant herewith issues the following C[illegible]iance Order against Respondent herein:

1. Respondent shall henceforth manage all hazardous wastes generated at the facility in such a manner so as to insure that no wastes or waste constituents are released to the environment in violation of 40 CFR §265.31.

2. Respondent shall immediately transfer any hazardous waste stored at the facility from containers which are leaking or corroded to containers which are sound or otherwise dispose of the materials in a manner in compliance with the Act and the regulations.

3. Respondent shall, within 60 days of the effective date of this Order, identify and remove any contaminated soils from the grounds of the facility and dispose of them in a manner in compliance with the Act and the regulations.

NOTICE OF LIABILITY FOR ADDITIONAL CIVIL PENALTIES

Pursuant to the terms of Section 3008(a)(3) of the Act, a violator failing to take corrective action within the time specified in a Final Compliance Order is liable for a civil penalty of up to $25,000 for each day of continued noncompliance. Such continued noncompliance may also result in suspension or revocation of any permits issued to the violator pursuant to the authority of the Act.

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NOTICE OF OPPORTUNITY TO REQUEST A HEARING

As provided in Section 3008(b) of the Act, and in accordance with EPA's Consolidated Rules of Practices Governing the Administrative Assessment of Civil Penalties and the Revocation or Suspension of Permits, 40 CFR Part 22, 45 Fed. Reg. 24360 (April 9, 1980) (a copy of which accompanies this Complaint, Compliance Order, and Notice of Opportunity for Hearing), you have the right to request a hearing to contest any material fact set out in the Complaint, or to contest the appropriateness of the proposed penalty, or the terms of the Compliance Order. (Consistent with the provisions of Section 3008(b) of the Act, the hearing provided will be noticed and open to the general public, should you specifically request such a public hearing. In the absence of such a specific request, however, public notice of a scheduled hearing will not be published.)

To avoid being found in default, and having the proposed civil penalty assessed and the Compliance Order confirmed without further proceedings, you must file a written answer to the Complaint, which may include a request for a hearing. Your answer (if any) must be addressed to the Regional Hearing Clerk, U.S. Environmental Protection Agency, Region II, 26 Federal Plaza, New York, New York, 10278, and must be filed within thirty (30) days of your receipt of this Complaint, Compliance Order, and Notice of Opportunity for Hearing. Your answer must clearly and directly admit, deny or explain each of the factual allegations contained in the Complaint, and should contain (1) a clear statement of the facts which constitute the grounds of your defense, and (2) a concise statement of the contentions which you intend to place in issue at the hearing.

The denial of any material fact, or the raising of any affirmative defense, will be construed as a request for a hearing. Failure to deny any of the factual allegations in the Complaint will be deemed to constitute an admission of the undenied allegations. Your failure to file a written answer within thirty (30) days of receipt of this instrument will be deemed to represent your admission of all facts alleged in the Complaint, and a waiver of your right to a formal hearing to contest any of the facts alleged by the Complainant. Your default will result in the final issuance of the Compliance Order, and assessment of the proposed civil penalty, without further proceedings.

INFORMAL SETTLEMENT CONFERENCE

Whether or not you request a hearing, the EPA encourages settlement of this proceeding consistent with the provisions of the Act. At an informal conference with a representative of the Complainant you may comment on the charges and provide whatever additional information you feel is relevant to the disposition of this matter, including any actions you have taken to correct the violation, and any other special circumstances you care to raise. The Complainant has the authority to modify the amount of the proposed penalty, where appropriate, to reflect any settlement agreement reached with you in such conference, or to recommend that any or all of the charges be dismissed, if the circumstances so warrant. Your request for an informal

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conference and other questions that you may have regarding this Complaint, Compliance Order, and Notice of Opportunity for Hearing should be directed to Bruce R. Adler, Attorney, General Enforcement Branch, U.S. Environmental Protection Agency, Region II, 26 Federal Plaza, New York, New York, 10278, telephone (212) 264-9898.

Please note that a request for an informal settlement conference does not extend the thirty (30) day period during which a written answer and request for a hearing must be submitted. The informal conference procedure may be pursued as an alternative to or simultaneously with the adjudicatory hearing procedure. However, no penalty reduction will be made simply because such a conference is held. Any settlement which may be reached as a result of such conference will be embodied in a written Consent Agreement and Final Compliance Order to be issued by the Regional Administrator of EPA, Region II, and signed by you or your representative. Your signing of such Consent Agreement would constitute a waiver of your right to request a hearing on any matter stipulated to therein.

RESOLUTION OF THIS PROCEEDING WITHOUT HEARING OR CONFERENCE

Instead of filing an answer requesting a hearing or requesting an informal settlement conference, you may choose to comply with the terms of the Compliance Order, and to pay the proposed penalty. In that case, payment should be made by sending to the Regional Hearing Clerk, EPA, Region II, a cashier's or certified check in the amount of the penalty specified in the "Proposed Civil Penalty" section of this instrument. Your check must be made payable to the United States of America.

DATED: New York, New York

January 15, 1982

COMPLAINANT:

Julio Morales-Sanchez
Director
Enforcement Division
U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, New York 10278

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bcc: George Raden, 2WA-WF
Richard Mays, (WH-527)
Tom Taccone, 2PM-PA

TO: Mr. Jack Slater
R.F.L. Industries
Powerville Road
Boonton, New Jersey 07005

cc: Mr. Jerry Burke, Esq.
New Jersey Department of
Environmental Protection

CERTIFICATE OF SERVICE

This is to certify that on the day of 198 I served a true and correct copy of the foregoing Complaint by certified mail to Mr. Jack Slater, R.F.L. Industries, Powerville Road, Boonton, New Jersey, 07005. I handcarried the original foregoing Complaint to the Regional Hearing Clerk.

ELLEN P. PALMISANO
Clerk Stenographer

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II

In the Matter of R.F.L. INDUSTRIES NJD002156677 (Boonton, New Jersey) Respondent. Proceeding Under Section 3008 of the Solid Waste Disposal Act, as amended.	CONSENT AGREEMENT AND FINAL ORDER Docket No. II RCRA-82-0108

PRELIMINARY STATEMENT

This administrative proceeding was instituted pursuant to Section 3008 of the Solid Waste Disposal Act, as amended, 42 U.S.C. §6901 et seq. ("the Act"). [Note: Among the statutes amending the Act is the Resource Conservation and Recovery Act, 90 Stat. 2795, P.L. 94-580 (1976).]

The Director of the Enforcement Division of the U.S. Environmental Protection Agency ("EPA"), Region II, Complainant in this proceeding, issued a Complaint, Compliance Order and Notice of Opportunity for Hearing to Respondent R.F.L. Industries on January 18, 1982. Said document charged Respondent with certain violations of Section 3002 of the Act, 42 U.S.C. §6922, and the regulations promulgated thereunder.

This Consent Agreement and Final Order is being entered into by the parties in full settlement of all liabilities which might have attached as a result of the violations alleged in the Complaint. Respondent, without admitting or denying the facts set out herein, consents to the issuance of

ATTACHMENT M-1

the attached Final Order. Respondent furthermore waives its right to receive a hearing on the above-referenced Final Consent Order, and agrees to pay a penalty in the amount called for therein.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

1. Respondent owns and operates a facility located at Powerville Road, Boonton, New Jersey.

2. By notification dated July 24, 1980, Respondent informed EPA that it conducts activities at the facility involving "hazardous waste," as that term is defined in Section 1004(5) of the Act, 42 U.S.C. §6904(5) and in 40 CFR §261.3. By application dated February 2, 1981, Respondent requested a permit to conduct its hazardous waste activities.

3. On or about October 15, 1981, an inspection of the facility was conducted by duly-designated employees of EPA pursuant to Section 3007 of the Act, 42 U.S.C. §6927. Said inspection was conducted for the purpose of enforcing the EPA regulations for hazardous waste management, 40 CFR Parts 260 through 265 (published in 45 Fed. Reg. 33063 et seq., May 19, 1980 and as later amended), promulgated pursuant to Subtitle C of the Act, 42 U.S.C. §6921 et seq.

4. The above-referenced inspection revealed that Respondent's facility was being used for the generation and storage of hazardous waste, including spent acids.

5. 40 CFR Part 265 sets standards for all hazardous waste storage facilities.

6. 40 CFR §265.31 requires that a hazardous waste treatment, storage, or disposal facility be maintained and operated in a manner designed to minimize the possibility of any unplanned sudden or non-sudden release of hazardous

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waste or hazardous waste constituents to the environment. At the time of the above-referenced inspection, 5-6 leaking and/or corroded drums of hazardous waste were stored on the ground surrounded by evidence of spills. Respondent was therefore in violation of 40 CFR §265.31.

7. Respondent has represented to Complainant that, immediately subsequent to the inspection, all corroded and/or leaking drums were properly removed from the property and disposed of.

FINAL CONSENT ORDER

Based upon the foregoing, and pursuant to Section 3008 of the Act and Section 22.18 of the Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation or Suspension of Permits, 40 CFR §22.18, it is hereby ORDERED that:

1. Respondent shall henceforth manage all hazardous wastes generated at the facility in such a manner so as to insure that no wastes or waste constituents are released to the environment in violation of 40 CFR §265.31.

Within sixty (60) days of receipt of a signed and executed copy of this Final Consent Order, Respondent shall pay by cashier's or certified check a civil penalty for the violations cited herein in the amount of three thousand five hundred dollars ($3,500), payable to the Treasurer, United States of America. Such payment shall be remitted to the Regional Hearing Clerk, EPA, Region II, 26 Federal Plaza, New York, New York, 10278. Failure to remit such payment in full will result in the referral of this matter to the United States Attorney for collection.

SO ORDERED, EFFECTIVE IMMEDIATELY.

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CONSENT

Respondent has read the foregoing Order and consents to its issuance and to its terms. Furthermore, Respondent explicitly waives its right to request a hearing on this Order, and agrees to pay the penalty amount called for in the Order.

RESPONDENT

BY: [signature]
Vice President & [illegible]
RFL Industries Inc
R.F.L. INDUSTRIES

DATE: March 2 1982

COMPLAINANT:

[signature]
MICHAEL P. BONCHONSKY
Acting Director
Enforcement Division
U.S. Environmental Protection Agency
Region II

The Regional Administrator of EPA, Region II, concurs in the above-cited findings. The foregoing Order as agreed upon by the parties is hereby approved and issued, effective immediately.

DATE: MAR 22 1982

[signature]
JACQUELINE E. SCHAFER
Regional Administrator
U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, New York 10278

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McCann

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DOWTY RFL Industries Inc.

Boonton, New Jersey 07005-0239 ● Tel: (201) 334-3100 ● TWX: 710-987-8352 ● Cable: RADAIRCO, N.J.

CERTIFIED MAIL -
RETURN RECEIPT REQUESTED

July 27, 1983

Mr. George G. McCann
Assistant Director
Enforcement Element
Department of Environmental Protection
P. O. Box CN 029
Trenton, New Jersey 08625

Dear Mr. McCann:

This is to certify that Dr. Thomas B. Martin is the President of Dowty RFL Industries Inc. and is authorized to sign for the corporation on all lawful matters. He is hereby able to sign your Administrative Consent Order dated July 15, 1983.

Very truly yours,

DOWTY RFL INDUSTRIES INC.

Richard W. Seabury

Richard W. Seabury, III
Corporate Secretary

RWSIII:mch
Enclosure

ATTACHMENT N-1

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
P.O. BOX CN 029
TRENTON, NEW JERSEY 08625

JOHN W. GASTON JR., P.E.
DIRECTOR

IN THE MATTER OF:
DOWTY RFL INDUSTRIES,
INCORPORATED

ADMINISTRATIVE CONSENT ORDER

The following FINDINGS are made and ORDER issued pursuant to the authority vested in the Commissioner of the New Jersey Department of Environmental Protection (NJDEP) by N.J.S.A. 13:1D-1 et seq., and the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and duly delegated to the Assistant Director of Enforcement of the Division of Water Resources pursuant to N.J.S.A. 13:1B-4.

FINDINGS

1. Dowty RFL Industries, Inc., (hereinafter "RFL") operates an infiltration/percolation lagoon (as defined in N.J.A.C. 7:14A-1.10 of the Regulations concerning the New Jersey Pollutant Discharge Elimination System (NJPDES)) at its facility located on Powderville Road, Boonton Township, Morris County. Results of water samples collected from the lagoon by RFL on May 23, 1982, July 14, 1982, August 20, 1982 and December 15, 1982 and by NJDEP on July 10, 1980 are summarized in Appendix A to this Order. These results indicate that the lagoon contains the following pollutants which are listed as hazardous substances under N.J.A.C. 7:1E-1.1 et seq.: copper, lead, iron, zinc, nickel, silver, chromium, 1,1,1 trichloroethane, toluene, trichloroethylene, tetrachloroethylene, 1,1,2,2 tetrachloroethane and o-xylene.

2. During a meeting held on February 16, 1983, representatives of RFL informed representatives of NJDEP that the infiltration/percolation lagoon would be eliminated by June 1, 1983.

3. The discharge of pollutants without a valid NJPDES permit is a violation of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., specifically, N.J.S.A. 58:10A-6a, and the NJPDES Regulations, N.J.A.C. 7:14A-1 et seq., specifically, N.J.A.C. 7:14A-1.3.

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ORDER

NOW, THEREFORE, IT IS HEREBY ORDERED AND AGREED THAT RFL:

4. Shall cease all discharges to the ground water, and specifically to the infiltration/percolation lagoon, by July 1, 1983.

5. Shall continue to monitor, until such time as the discharge to the infiltration/percolation lagoon has been eliminated, which shall be on or before July 1, 1983, in accordance with the conditions listed in Appendix B to this Order. Ground water monitoring shall continue subsequent to elimination of the lagoon. NJDEP will issue a NJPDES initial interim Discharge to Ground Water Monitoring Permit to RFL pursuant to N.J.A.C. 7:14A-1 et seq.

6. Any submission of information required by this Order shall be mailed to:

Joseph M. Mikulka, Chief
Region IV
Enforcement Element
Division of Water Resources
CN-029
Trenton, New Jersey 08625

7. RFL hereby consents to and agrees to comply with all the terms and provisions of the Administrative Consent Order, which shall be fully enforceable in the Superior Court of New Jersey having jurisdiction over the subject matter and signatory parties, upon the filing of a summary action for compliance pursuant to N.J.S.A. 58:10A-1 et seq., and also may be enforced in the same fashion as an Administrative Order issued by the NJDEP pursuant to this same statutory authority.

8. This Administrative Consent Order shall not preclude the NJDEP from taking whatever action it deems appropriate to enforce the water pollution control laws of the State of New Jersey in any manner not inconsistent with the terms of this Administrative Consent Order. Nothing in this Consent Order shall constitute a waiver of any statutory right of NJDEP pertaining to any of the laws of the State of New Jersey, should NJDEP determine that additional remedial measures are necessary to protect the public health, safety or welfare.

9. The provision of this Order shall be binding on RFL, its principals, agents, employees, successors, assigns and tenants.

10. No obligations imposed by this Order are intended to constitute a debt, damage claim, penalty, or other civil action which should be limited or discharged in a bankruptcy proceeding. All obligations imposed by this Order shall constitute continuing regulatory obligations imposed pursuant to the police powers of the State of New Jersey, intended to protect the public health, safety and welfare.

11. Force Majeure
If any event occurs which purportedly causes or may cause delays in the achievement of any provision of this ADMINISTRATIVE CONSENT ORDER, RFL

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shall notify the Department in writing within ten (10) business days of the delay or anticipated delay, as appropriate, describing the anticipated length, precise cause or causes, measures taken or to be taken, and the time required to minimize the delay. RFL shall adopt all reasonable necessary measures to prevent or minimize delay. Failure by RFL to comply with the notice requirements of this paragraph shall render this Force Majeure provision void and of no effect as to the particular incident involved.

If the delay or anticipated delay has been or will be caused by fire, flood, riot, strike or other circumstances alleged to be beyond the control of RFL, then the time for performance hereunder shall be extended, subject to the approval of NJDEP, for a second no longer than the delay resulting from such circumstances. However, if the events causing such delay are not found to be beyond the control of RFL, failure to comply with the provisions of this ADMINISTRATIVE CONSENT ORDER Shall not be excused as herein provided and shall constitute a breach of the Order's requirements. The burden of proving that any delay is caused by circumstances beyond the control of RFL and the length of such delay attributable to those circumstances shall rest with RFL. Increases in the costs or expenses incurred in fulfilling the requirement contained herein shall not be basis for an extension of time; similarly, delay in an interim requirement shall not justify or excuse delay in the attainment of subsequent requirements.

12. Hearing Waiver
When this Consent Order becomes effective, RFL waives its right to a hearing on the matters contained hereinabove pursuant to N.J.S.A. 52:14B-1 et seq., and N.J.S.A. 58:10A-1 et seq.

This ADMINISTRATIVE CONSENT ORDER shall take effect upon the signature of both parties.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
BY AUTHORITY OF:
JOHN W. GASTON, JR., P.E., DIRECTOR

DATE: JUL 1 5 1983

BY: George G. McCann
GEORGE G. McCANN, ASSISTANT DIRECTOR

DOWTY RFL INDUSTRIES,
INCORPORATED

DATE: JULY 27, 1983

BY: Thomas B. Martin

NAME: THOMAS B. MARTIN

TITLE: PRESIDENT

N.4

APPENDIX A

N.5

Results of Lagoon Discharge Sample   Sampling conducted by RFL

DATE	05/23/82	07/14/82	08/26/82	12/15/82			
Total Chromium (as Cr)	0.35	0.744	0.148	0.346			
Lead	0.02	0.085	0.061	0.059			
Nickel	0.01	0.009	0.013	0.003			
Fluoride	0.29	0.44	0.268	0.27			
Chloride	52	75	42.7	31.6			
Total Dissolved Solids	389	332	282	273			
Oil and Grease	0.3	0.1	6.9	1.02			
Nitrate (as N)	2.50	3.54	0.284	18			
Hexaxalent Chromium (as Cr)	0.045	0.01	0.060	LT 0.05			
pH (units)	8.0	7.26	9.87	5.22			

All results reported as milligrams per liter.

LT = less than

96

Lagoon Discharge — Sampling conducted by RFL

DATE	05/23/82	07/20/82	08/26/82	12/15/82			
Methylene Chloride	9.1	19.7	10.5	40.9			
Acetone	651.5	ND	ND	ND			
1,1 Dichloroethane	2.7	1.3	5.2	ND			
Chloroform	1.0	ND	ND	ND			
1,1,1 Trichloroethane	73.4	39.3	124.1	21.4			
Trichloroethylene	22.6	23.8	73.5	8.3			
Heptane	2.6	1.8	ND	ND			
1,1 Dichloroethylene	ND	2.2	ND	ND			
Dibromochloromethane	ND	2.6	ND	ND			
Tetrachloroethylene	ND	1.0	0.9	ND			
t - 1.2 - Dichloroethylene	ND	ND	2.5	ND			

All results reported as parts per billion.

Results of Lagoon Bottom Sediment Sample

Sampling conducted by RE

DATE	05/23/82	07/14/82	08/26/82	12/15/82
Total Chromium (as Cr)	0.005	0.114	1.23	1.84
Lead	0.001	0.058	0.057	0.377
Nickel	0.002	0.015	0.005	0.125
Fluoride	0.28	0.58	0.460	0.40
Chloride	20	55	40.70	86.5
Total Dissolved Solids	72.4	329	282	409
Oil and Grease	LT 0.1	LT 0.1	LT 0.1	LT 0.1
Nitrate (as N)	0.14	0.253	0.284	0.94
Hexaxalent Chromium (as Cr)	LT 0.01	0.05	0.487	0.11
PH	7.1	10.02	8.05	10.18

All results as milligrams per liter.

LT = less than

Results of Lagoon Bottom Sediment Samples   Sampling conducted by RF

DATE	05/23/82	07/20/82	08/26/82	12/15/82			
Methylene Chloride	1.2	ND	1.7	0.9			
Chloroform	0.8	ND	ND	ND			
1,1,1 Trichloroethane	ND	5.2	7.8	21.0			
Trichloroethylene	ND	2.5	3.9	8.9			
1,1 Dechloroethane	ND	ND	ND	7.4			

All results repoted as parts per billion.

2/9

10

Chem-25
Sept. 75

N[illegible]RSEY STATE DEPARTMENT OF HEALTH
[illegible]EAM OR WASTEWATER ANALYSIS

RECEIVED
AUG 18 1 01 PM '80
NJ DEPT ENV PROTECTION
DIV WATER RESOURCES
MS&E

Time & Date Received By Labs
Lab. No.

FIELD INFORMATION

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

Date of Collection JULY 10, 1980
Hour 9:30 A.M. ✓ P.M.

Sample No. C07451

Composite Period GRAB Interval
Collected by G. CUNNINGHAM
Residual Chlorine:
Immediate
Developed

Municipality BOONTON
Plant RFL
Stream
Location Powerville Road

Flow Rate
Temperature

Description and Remarks: discharge onto lagoon

ITEMS CIRCLED BELOW ARE UNSATISFACTORY

Dilutions Requested (Bacteriological)	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

LABORATORY RESULTS

BACTERIOLOGICAL

Coliform MPN/100 ml. (Confirmed Test); Fecal Coliform MPN/100 ml. ND = NON-DETECTABLE, I.E. BELOW DETECTABLE LIMITS RE MEMO # 4

Fecal Streptococci:MPN/100 ml. Other

AUG 14 1980

REPORT SUBMITTED DIV. OF LABORATORIES & EPID.

CHEMICAL AND PHYSICAL ANALYSES (mgs./liter, unless otherwise noted)

	Color (units)	X	Chloride 18		Sulfate		Other Determinations
	Odor (cold)		Suspended Solids		Grease & Oil	X	FLOURIDE 2.0
	Turbidity (units)		Ash	X	Cyanide 0.001 K	X	ALUMINUM 0.001 K
	pH	X	Total Solids 304	X	Chromium Total 0.019	X	NICKEL 0.706
	Acidity to pH 4	X	Ash 164	X	Chromium Hex. 0.005 K	X	SILVER 0.031
	Alkalinity to pH 4	X	Total PO_4 2.3	X	Ortho - PO_4 0.89	X	PETROLEUM HYDROCARBON 1
X	~~Nitrite N~~ ~~Nitrate~~	X	MBAS 0.1	X	Copper 13.278	X	SPECIFIC CONDUCTIVITY 32
X	Nitrate N 4.0	X	Phenols 0.039	X	Lead 2.973	X	TOC 14.2 J
X	Ammonia N 0.42		~~COD~~ G.C.		Arsenic	X	V.O. Scan/ppb
	Total Kjel. N	X	Iron 0.453	X	Zinc 0.047		1,1,1 trichloroethane 260

trichloroethylene 124
toluene 2
tetrachloroethylene 5
1,1,2,2 tetrachloroethane 8

BIOCHEMICAL OXYGEN DEMAND (mgs./liter)

Field D.O.		Lab. D.O.			Seed Required:			Yes		No		
Sample Conc. %	PLEASE CIRCLE	0.1	0.2	0.5	1.0	2.0	5.0	10	25	50	75	100
BOD5												

N10

PART 1-CHEMISTRY COPY

H1832

Chem-25
Sept. 75

NEW JERSEY STATE DEPARTMENT OF HEALTH
STREAM OR WASTEWATER ANALYSIS
FIELD INFORMATION

RECEIVED AUG 18 1 01 PM '80 NJ DEPT ENV PROTECTION DIV WATER RESOURCES NS&E

Time & Date Received By Labs
Lab. No.

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

Date of Collection JULY 10, 1980
Hour 10:20 A.M. ✓ P.M.

Sample No. C07457

Composite Period GRAB Interval
Collected by GREGORY CUNNINGHAM
Residual Chlorine:
Immediate
Developed

Municipality BOONTON
Plant RFL
Stream
Location Powerville Road - Lagoon
Description and Remarks:

Flow Rate
Temperature

ITEMS CIRCLED BELOW ARE UNSATISFACTORY

Dilutions Requested (Bacteriological)	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

LABORATORY RESULTS
BACTERIOLOGICAL

Coliform MPN/100 ml. ______ (Confirmed Test); Fecal Coliform MPN/100 ml. ______

Fecal Streptococci:MPN/100 ml. ______ Other ______

ND = NON-DETECTABLE; I. E. BELOW DETECTABLE LIMITS RE MEMO # 4

AUG 14 1980
REPORT SUBMITTED
DIV. OF LABORATORIES & EPID.

CHEMICAL AND PHYSICAL ANALYSES (mgs./liter, unless otherwise noted)

	Color (units)	X	Chloride 89		Sulfate		Other Determinations
	Odor (cold)		Suspended Solids		Grease & Oil	X	FLUORIDE 20.
	Turbidity (units)		Ash	X	Cyanide 0.001 K	X	ALUMINUM 0.164
	pH	X	Total Solids 520	X	Chromium Total 0.010	X	NICKEL 0.297
	Acidity to pH 4	X	Ash 366	X	Chromium Hex. 0.005 K	X	SILVER 0.009
	Alkalinity to pH 4	X	Total PO4 28.	X	Ortho - PO4 25.3	X	PETROLEUM HYDROCARBONS 1.
X	~~Nitrite N + Nitrate~~	X	MBAS 1.2	X	Copper 0.850	X	SPECIFIC CONDUCTIVITY 798.6
X	Nitrate N 0.35	X	Phenols 0.052	X	Lead 0.051	X	TOC 34.5 J
X	Ammonia N 7.66		COD		Arsenic	X	V.O. Scan / ppb
	Total Kjel. N	X	Iron 0.391	X	Zinc 0.012		1,1,1 trichloroethane 9

trichloroethylene 66
TOLUENE 2
Tetrachloroethylene 1
o-xylene 1.

BIOCHEMICAL OXYGEN DEMAND (mgs./liter)

Field D.O.	Lab. D.O.			Seed Required:			Yes		No		
Sample Conc. % PLEASE CIRCLE	0.1	0.2	0.5	1.0	2.0	5.0	10	25	50	75	100
BOD5											

N11

PART 1-CHEMISTRY COPY

H1916

APPENDIX B

N12

EFFLUENT AND GROUND WATER MONITORING REQUIREMENTS

Samples from the discharge to the infiltration/percolation lagoon and from the onsite ground water monitoring wells shall be collected and analyzed for the following parameters specified below at quarterly intervals. All samples shall be collected and analyzed by methods considered acceptable by NJDEP beginning when the depth to the ground water table shall be measured from the original ground level and top of the monitor well casing prior to sample collection.

Parameters

All units in parts per billion (ppb) unless otherwise specified

Total Chromium (parts per million)(ppm)
Lead, ppm
Nickel, ppm
Fluoride, ppm
Chloride, ppm
Total Dissolved Solids, ppm
Oil & Grease, ppm
Nitrate (as N), ppm
Hexavalent Chromium, ppm
pH (units)
Chloromethane
Bromomethane
Dichlorodifluomethane
Vinyl Chloride
Acetone
Trichlorotrifluoromethane
1,1-Dichloroethylene
1,1-Dichloroethane
t-1,2-Dichloroethylene
Chloroform
1,2-Dichloroethane
t-Bytyl Methyl Ether
1,1,1-Trichloroethane
Carbon Tetrachloride
Bromodichloromethane
1,2-Dichloropropane
C-1,3-Dichloropropene
t-1,3-Dichloropropene
Trichloroethylene
1,1,2-Trichloroethane
Dibromochloromethane
Benzene
Diisosopropyl Ether
Hexane
Bromoform
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
Heptane
Toluene
Chlorobenzene
Ethyl Benzene

N 13.

Other information required quarterly

Elevation of Top of Monitoring Well Casing
(to be determined once but reported quarterly)

Depth of Water Table from top of Casing prior to sampling

Depth to Water Table from Original Ground Water Level Prior to Sampling

Based on the ground water elevations obtained at the monitoring wells, a ground water elevation contour map shall be developed on a map drawn to scale.

N14

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
120 Rt. 156, Yardville, N.J. 08620

DR. MARWAN M. SADAT, P.E.
DIRECTOR

LINO F. PEREIRA
DEPUTY DIRECTOR

AUG 0 3 1984

Mr. Jack E. Slater
RFL Industries Inc.
Powerville Road
Boonton, NJ 07005

Re: Notice of Violation
EPA ID #NJD002156677

Dear Mr. Slater:

Pursuant to the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. and regulations promulgated thereunder, specifically N.J.A.C. 7:26-9.13(b), the following facts are made:

FINDINGS

1) An examination of our files indicated that your facility listed land disposal activities specifically, T02 treatment in an impoundment, on your RCRA Part A application.

2) In accordance with N.J.A.C. 7:26-9.13(b) RFL Industries Inc. was required to demonstrate non-sudden liability insurance by submission of an originally signed duplicate of an insurance policy together with either a hazardous waste facility liability endorsement or a hazardous waste facility certificate of liability insurance, providing coverage of at least three (3) million dollars per occurrence with an annual aggregate of at least six (6) million dollars, exclusive of legal defense costs, by the following dates:

   (1) For an owner or operator with sales or revenues totaling $10 million or more, by April 8, 1982.

   (2) For an owner or operator with sales or revenue greater than $5 million but less than $10 million, by April 8, 1983.

   (3) For all other owners or operators, by April 8, 1984.

ATTACHMENT 01

3) To date RFL Industries Inc. has failed to submit the required non-sudden liability insurance documents to the Bureau of Hazardous Waste Engineering in violation of N.J.A.C. 7:26-9.13(b).

NOW, THEREFORE, YOU ARE HEREBY NOTIFIED that your facility shall submit the required non-sudden liability insurance documents within thirty (30) days of receipt of this NOTICE to Mr. John Barry, Bureau of Compliance and Enforcement, 120 Route 156, Yardville, New Jersey 08620.

BE ON NOTICE that the Solid Waste Management Act provides for penalties of up to $25,000 per day for violation of the Department's hazardous waste management regulations. Your failure to correct the above violation will result in a penalty action by this Department up to the maximum allowed pursuant to law.

If you have any questions regarding the documents to be submitted, please contact Mr. Ben Esterman at the Bureau of Hazardous Waste Engineering at (609) 984-4061.

If you have any questions regarding this Notice and the required report, please call Mr. John Barry at (609) 984-3695.

Very truly yours,

David J. Shotwell
Chief, Bureau of Compliance
and Enforcement

F010:F014:lmc
Attachment

02

HW01124

1(L) 2C

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WASTE MANAGEMENT

CN 407 - Trenton, NJ 08625

DR. MARWAN M. SADAT, P.E.
DIRECTOR

LINO F. PEREIRA
DEPUTY DIRECTOR

JUL 14 1986

Dowty-RFL Industries, Inc.
Powerville Road
Booton, New Jersey 07005

Attention: Steven R. Gilliatt

Re: Notice of Violation and
Penalty Settlement Offer

Dear Mr. Gilliatt:

Pursuant to the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. and regulations promulgated thereunder, specifically N.J.A.C. 7:26-7.4(a)3, 7.4(e)4, 9.3(a)3, 9.4(d)4v, 9.4(d)5, 9.4(g)5, 9.4(g)6i, 9.4(g)6ii, 9.4(g)6iii, 9.4(g)6iv. the following findings of fact are made:

FINDINGS

1) The New Jersey Department of Environmental Protection (hereinafter "the Department") has determined that Dowty RFL Industries, Inc. (hereinafter "Dowty") is a generator of hazardous waste (EPA ID Number NJ002156677) as defined by N.J.A.C. 7:26-1.4 and is located at Block 12, Lot 20, Powerville Road, Booton Township, County of Morris, New Jersey.

2) During a routine Departmental inspection conducted at the above referenced location on January 31, 1986, the following violations were observed.

   a. Dowty failed to prepare a manifest before offering hazardous waste for transportation for the purpose of off-site, treatment, storage or disposal, in violation of N.J.A.C. 7:26-7.4(g)3.

   b. Dowty shipped hazardous waste to a site which is not an authorized hazardous waste facility, in violation of N.J.A.C. 7:26-7.4(e)4.

ATTACHMENT P1

c. Dowty failed to clearly mark, upon each hazardous waste container, the date upon which each period of accumulation begins, in violation of N.J.A.C. 7:26-9.3(a)3.

d. Dowty failed to arrange every hazardous waste container so that its identification label is visible, in violation of N.J.A.C. 7:26-9.4(d)4v.

e. Dowty failed to inspect areas where hazardous waste containers are stored, at least daily, looking for leaks and for deterioration cause by corrosion or other factors, in violation of N.J.A.C. 7:26-9.4(d)5.

f. Dowty failed to have facility personnel successfully complete the program required under N.J.A.C. 7:26-9.4(g)1-3, with six months after the date of their employment, in violation of N.J.A.C. 7:26-9.4(g)4.

g. Dowty failed to have facility personnel take part in an annual review of the initial training required under N.J.A.C. 7:26-9.4(g)1-3, in violation of N.J.A.C. 7:26-9.4(g)5.

h. Dowty failed to prepare and maintain the following records and documents at the facility:

hi. The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job in violation of N.J.A.C. 7:26-9.4(g)6i.

hii. A written job description for each position listed under subparagraph 9.4(g)6i, in violation of N.J.A.C. 7:26-9.4(g)6ii. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but shall include the requisite skill, education, or other qualifications, and duties of employees assigned to each position, in violation of N.J.A.C. 7:26-9.4(g)6iii.

hiii. A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under subparagraph 9.4(g)6i, in violation of N.J.A.C. 7:26-9.4(g)6iii.

hiv. Records that document that the training or job experience required under paragraphs 9.4(a)1 through 5 has been given to, and completed by, facility personnel, in violation of N.J.A.C 7:26-9.4(g)6iv.

3) On January 31, 1986 Dowty was issued a field Notice of Violation for the violation referenced in paragraph 2 above.

P2

4) By letter dated February 18, 1986 Dowty responded to the January 31, 1986 field Notice of Violation. Based upon Departmental review of said letter and a follow up inspection conducted on February 24, 1986, it has been determined that Dowty is in compliance of the violations referenced above.

N.J.S.A. 13:1E-9c provides for maximum civil penalties of $25,000 per day for violations of this nature. In accordance with N.J.S.A. 13:1E-9d, the Department is amenable to compromise and settle this statutory claim for penalties for the aforementioned violations for the sum of $2,375.00. Should you decide to accept this Penalty Settlement Offer, payment must be made within fifteen (15) calendar days of your receipt of this letter. Only checks or money orders drawn to the New Jersey Department of Environmental Protection will be accepted.

Should you decide not to accept this Penalty Settlement Offer or fail to forward payment within fifteen (15) calendar days of receipt of this letter, this offer is rescinded and this matter will be referred to the Office of the Attorney General for the initiation of litigation seeking the full penalties allowed by law.

Acceptance of this Penalty Settlement Offer does not relieve you from immediately complying with the sections of the New Jersey Administrative Code cited above. Each day the violation continues shall be considered a separate violation subject to penalties of up to $25,000.00 per day.

Should you wish to discuss the specifics of this Notice and Offer, contact David Longstreet at 201-299-7567.

Be advised that such discussion will not automatically delay or otherwise extend the deadline for acceptance of this Penalty Settlement Offer.

Very truly yours,

Ronald T. Corcory

Ronald T. Corcory
Acting Assistant Director
Enforcement - Division of Hazardous
Waste Management

F01:FON1:jms

B3

Form HWM 004
1/87

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT
~~5th Fl., 401 E. State St., Trenton, N.J. 08625~~
1259 Rt 46 Parsippany NJ 07826

Pg 1 of 1
(201) 299-7573

NOTICE OF VIOLATION

ID NO NJD002156677 DATE 11/17/87

NAME OF FACILITY Dowty RFL Industries Inc

LOCATION OF FACILITY Powerville Rd, Boonton NJ

NAME OF OPERATOR Jack Slater, Facility Manager

You are hereby NOTIFIED that during my inspection of your facility on the above date, the following violation(s) of the Solid Waste Management Act, (N.J.S.A. 13:1E-1 et seq.) and Regulations (N.J.A.C. 7:26-1 et seq.) promulgated thereunder and/or the Spill Compensation and Control Act, (N.J.S.A. 58:10-23.11 et seq.) and Regulations (N.J.A.C. 7:1E-1 et seq.) promulgated thereunder were observed. These violation(s) have been recorded as part of the permanent enforcement history of your facility.

DESCRIPTION OF VIOLATION

NJAC 7:26-9.7(c) Contingency plan does not describe action to be taken by facility personnel in response to a fire, explosion or other unplanned emergency
NJAC 7:26-9.7(e) Contingency plan does not describe arrangements agreed to by local fire departments, police hospitals, emergency coordinators.

Remedial action to correct these violations must be initiated immediately and be completed by December 15, 1987. Within fifteen (15) days of receipt of this Notice of Violation, you shall submit in writing, to the investigator issuing this notice at the above address, the corrective measures you have taken to attain compliance. The issuance of this document serves as notice to you that a violation has occurred and does not preclude the State of New Jersey, or any of its agencies from initiating further administrative or legal action, or from assessing penalties, with respect to this or other violations. Violations of these regulations are punishable by penalties of $25,000 per violation.

Carolyn C Seifried
Investigator, Division of Waste Management
Department of Environmental Protection

For copy of regulations
609-292-8343

ATTACHMENT Q1

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR PERMIT TO CONSTRUCT, INSTALL OR ALTER CONTROL APPARATUS OR EQUIPMENT

TO: New Jersey State Department of Environmental Protection
Bureau of Air Pollution Control
P. O. Box 1390
Trenton, New Jersey 08625

Date Aug 15, 1972

Use instructions, Air-D13

Sec. A

1. Full Business Name R. F. L. Industries Inc.
2. Address of equipment and/or control apparatus:

No.	Street	Municipality	County
	Powerville Road,	Boonton Twp.	Morris

3. Location on premises (Bldg., Dept., area etc.) Between Bldg 5&6
4. Nature of Business Electronic Manufacturer SIC No. 3661

Sec. B

1. [X] New process equipment and new air pollution control apparatus
   [ ] New air pollution control apparatus on existing process equipment
   [ ] New process equipment with no control apparatus
   [ ] Other:
2. Prior permit numbers covering this installation. Specify. none
3. Estimated starting date Aug 30 Estimated completion September 15, 1972

Sec. C

1. Description of operation On site incineration of trash and garbage
2. Identify process equipment Smokatrol Incinerator W/Patented Afterburner
3. Raw materials (names) wood, paper, sweepings, garbage

Total pounds per hour 150 -250 Total pounds per batch variable

4. Operating procedure:
   [ ] Continuous: ______ hrs. per day ______ days per [ ] week [ ] month
   [ ] Batch: 1-2 hrs. per batch 3-4 Batches per [X] day [ ] week

Sec. D

Physical and chemical nature of air contaminants which must evolve from operation and be emitted into the open air:

AIR CONTAMINANTS	AMOUNTS OF CONTAMINANTS With Control Apparatus	AMOUNTS OF CONTAMINANTS Without Control Apparatus
particulates, smoke odor, fly ash	less than 0.2gr	particulates
	per scf-flu gas	gases
	corrected to 12%	odors
	CO2 odors dest-	smoke
	ructed, less than	
	No.1 Ringleman	
	no fly ash	

ATTACHMENT R1

(Continue on reverse side)

Sec. E	
	1. Describe air pollution control apparatus Smokatrol Incinerator with patented afterburner located at stack level (see test results attached)
	2. Efficiency of control apparatus: 99 %
	3. Height of discharge above ground 19 ft.
	4. Distance from discharge to nearest property line 80 ft.
	5. Volume of gas discharged into open air 1140 cu. ft. per min. at stack conditions
	6. Exit linear velocity at point of discharge 900 ft. per minute at stack conditions
	7. Temperature at point of discharge 1600 °F at afterburner chamber
	8. Will emissions comply with existing local requirements? yes
	9. Initial cost of control apparatus $ 975.00
	10. Estimated annual operating cost $ 350.00

This application is submitted in accordance with the provisions of N.J.S.A. 26:2C-9.2, and to the best of my knowledge and belief is true and correct.

R. F. L. Industries
Powerville Rd.
Boonton, N.J.
Mailing Address
07005
Zip Code

[signature]
Signature – all copies
R. W. Seabury III
Name (Print or type)
Secretary
Title
201 334 3100
Telephone No.

DO NOT WRITE BELOW

PERMIT TO CONSTRUCT, INSTALL OR ALTER CONTROL APPARATUS OR EQUIPMENT

Application for permission to construct, install or alter the equipment and/or control apparatus as set forth above is APPROVED.

Date 10-4-72

PERMIT NO. P-8944

Approved by: [signature]

Supervisor, Permits & Certificates

Submit original and three (3) copies

M5379

R2

RENEWED

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR CERTIFICATE TO OPERATE CONTROL APPARATUS OR EQUIPMENT

TO: New Jersey State Department of Environmental Protection
Bureau of Air Pollution Control
P. O. Box 1390
Trenton, New Jersey 08625

Date Aug 15, 1972

Use Instructions, Air-D-14

Sec. A	1. Reference Permit No. ______ SIC No. 3661 2. Full Business Name R. F. L. Industries Inc. 3. Address of equipment and/or control apparatus: Powerville Rd. (No. / Street) Boonton (Municipality) Morris (County) 4. Location on premises (Bldg., Dept., area, etc.) Between Bldg. 5&6
Sec. B	1. Identify process equipment Smokatrol Incinerator W/Patented Afterburner located at stack level Model 200 2. List air pollution control apparatus Patented afterburner located at stack level 3. Date equipment to be put in use September 15, 1972
Sec. C	Plant Contact: R. W. Seabury III — Name (Print or Type) 201 334-3100 — Telephone No. Secretary — Title Telephone Extension

This application is submitted in accordance with the provisions of N.J.S.A. 26:2C-9.2, and to the best of my knowledge and belief is true and correct.

R. F. L. Industries Inc.
Powerville Rd.
Boonton, N.J. 07005
Mailing Address, Zip

Signature — all copies
R. W. Seabury III
Name (Print or Type)
Secretary
Title

DO NOT WRITE BELOW

CERTIFICATE TO OPERATE CONTROL APPARATUS OR EQUIPMENT

TEMPORARY DURATION	5 YEAR DURATION
Certificate No.	Certificate No. C7089
Date Approved	Date Approved 3.13.73
Expiration date	Expiration date 3.13.78
Approved by: *Supervisor, Permits & Certificates*	Approved by: *Supervisor, Permits & Certificates*

R3

Submit original and ... copies

M6042

#IE - MS

July 17, 1978

R.F.L. Industries, Inc.
Powerville Road
Boonton, New Jersey 07005

Reference: Certificate No. CT-7089
Expiration Date - February 13, 1978
Permit No. P-8944

Dear Sir:

A field inspection by the Bureau of Air Pollution Control on May 8, 1978 determined that equipment covered under the above referenced "Certificate to Operate Control Apparatus or Equipment" is no longer operated by your company. Consequently, the referenced operating Certificate, is hereby cancelled.

Prior to any future operation of the equipment formerly covered by this Certificate you must apply for a new "Certificate to Operate Control Apparatus or Equipment".

If you should have any questions relative to this matter, please feel free to contact the undersigned at 609-292-6716.

Very truly yours,

Allan T. Edwards, Supervisor
Permits & Certificates Section
Bureau of Air Pollution Control

ATE:rv

cc: Field Office - Metro

R4

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
P. O. BOX 2809
TRENTON, NEW JERSEY 08625

April 27, 1978

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Richard Seabury, III
RFL Industries, Inc.
Powerville Road
Boonton, New Jersey 07005

Re: RFL Industries, Inc.
Wastewater Disposal System

Dear Mr. Seabury:

This letter is in reference to the industrial wastewater disposal system (evaporation pond) at RFL Industries, Inc., Powerville Road, Boonton Township.

On September 7, 1977 samples were taken of the plating wastewater from the evaporation pond by a representative of the Department. The analysis indicates that the wastewater is as follows:

Iron	2.0 mg/l
Lead	2.3 mg/l
Copper	3.88 mg/l
Nickel	.184 mg/l
Cyanide	.05 mg/l
Chromium Total	.043 mg/l
Zinc	.083 mg/l
Cadmium	.006 mg/l
COD	137 mg/l
Total dissolved Solids	620 mg/l
pH	3.9 SU

Further investigation by this Department revealed that the present evaporation pond is inadequate to prevent wastewater percolation into the groundwater and that RFL does not have approval to use the evaporation pond as a disposal method in violation of NJSA 58:10A-1 et. seq.

ATTACHMENT S1A

In a subsequent letter dated February 3, 1978, RFL Industries, Inc. submitted to this office information concerning corrective measures for the wastewater disposal system including flow reduction, increased scavaging, change in plating solution and evaporation pond modification. In order to insure that the corrective measures establish compliance with NJSA 58:10A-1 et. seq., the Department is, therefore, directing RFL Industries to make application to this office for a Stage I conceptual approval for an Industrial Wastewater Treatment Facility, on or before June 30, 1978. A tentative construction schedule should be included with the application. Enclosed is a copy of the outline to be used in making your Stage I submission and a copy of the regulations (NJAC 7:14-1 et seq.,) concerning wastewater treatment facilities.

RFL Industries, Inc., is further directed to submit to this office a monthly report, beginning June 1, 1978, detailing the progress made to date and continuing until advised otherwise by this office.

If there are any questions concerning the above please contact Mr. Robert Plumb at (201) 648-2200.

Very truly yours,

Robert J. Reed
Supervisor of Field Operations
Passaic-Hackensack Basin
Water Pollution Control
Monitoring, Surveillance
and Enforcement Element

A4:G19

cc: Mayor and Council, Boonton Township
Mrs. Nelson

518

Chem-25
Sept. 75

MAR 1 ... AM OR WASTEWATER ANALYSIS

Time & Date Received By Labs
Lab. No.

NJ DEPT ENV PRO
DIV WATER RESOURCES
MS&E

FIELD INFORMATION

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

Date of Collection JAN 30 1979

Hour 11:10 A.M. ______ P.M. ______

Sample No. 03630

Composite Period GRAB Interval ______

Collected by R. Plunt

Residual Chlorine:
Immediate —
Developed —

Municipality Boonton Twp.

Plant RFL

Stream Trib. To Rockaway

Location ______

Flow Rate —

Temperature —

Description and Remarks: SAMPLE OF LAGOON, OPPOSITE INFLUENT AREA

ITEMS CIRCLED BELOW ARE UNSATISFACTORY

Dilutions Requested (Bacteriological)

10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

LABORATORY RESULTS

BACTERIOLOGICAL

Coliform MPN/100 ml. ______ (Confirmed Test); Fecal Coliform MPN/100 ml. ______

Fecal Streptococci:MPN/100 ml. ______ Other ______

ORGANIC SCAN - SUSPECT COMPOUNDS LISTED BELOW; EDTA, TRISODIUM NITRILOTRIACETATE, HEDTA, DISODIUM AMINODIACETATE, TRIETHANOLAMINE, QUADROL, SODIUM POTASSIUM TARTRATE, CARBAMATES

CAN NOT RUN

CHEMICAL AND PHYSICAL ANALYSES (mgs./liter, unless otherwise noted)

						Other Determinations
	Color (units)		Chloride		Sulfate	
	Odor (cold)		Suspended Solids		Grease & Oil	ORGANIC SCAN
	Turbidity (units)		Ash		Cyanide	trichloroethane 480 ppb
	pH		Total Solids		Chromium Total	trichloroethylene 225 ppb
	Acidity to pH 4		Ash		Chromium Hex.	Toluene 55 ppb
	Alkalinity to pH 4		Total PO_4		Ortho - PO_4	Chloroform 225 ppb
	Nitrite N		MBAS		Copper	
	Nitrate N		Phenols		Lead	
	Ammonia N		COD		Arsenic	ND = NON-DETECTABLE: I. E. BELOW DETECTABLE LIMITS RE MEMO # 4
	Total Kjel. N		Iron		Zinc	

FEB 27 1979
REPORT SUBMITTED
DIV. OF LABORATORIES & EPID.

BIOCHEMICAL OXYGEN DEMAND (mgs./liter)

Field D.O.	Lab. D.O.			Seed Required:			Yes	No			
Sample Conc. % PLEASE CIRCLE	0.1	0.2	0.5	1.0	2.0	5.0	10	25	50	75	100
BOD_5											

ATTACHMENT S2A

PART 1-CHEMISTRY COPY

Chem-25
Sept. '75

ENDU
MINOR

AM OR WASTEWATER ANALYSIS

MAR 10 34 AM '79

By Labs
Lab. No.

FIELD INFORMATION

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

NJ DEPT ENV PROTECTION
DIV WATER RESOURCES
HS&E

Date of Collection JAN 30 1979
Hour 11:10 A.M. ______ P.M. ______
Composite Period GRAB Interval ______
Collected by R. Plant
Residual Chlorine:
Immediate —
Developed —
Flow Rate —
Temperature —

Sample No. 03629

Municipality BOONTON TWP.
Plant RFL
Stream TRIB to ROCKAWAY R.
Location ______

Description and Remarks: SAMPLE OF LAGOON, OPPOSITE INFLUENT AREA

ITEMS CIRCLED BELOW ARE UNSATISFACTORY

Dilutions Requested (Bacteriological)	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

LABORATORY RESULTS

BACTERIOLOGICAL

Coliform MPN/100 ml. ______ (Confirmed Test); Fecal Coliform MPN/100 ml. ______

Fecal Streptococci:MPN/100 ml. ______ Other ND = NON-DETECTABLE; I. E. BELOW DETECTABLE LIMITS RE MEMO # 4

FEB 27 1979

REPORT SUBMITTED
DIV. OF LABORATORIES & EPID.

CHEMICAL AND PHYSICAL ANALYSES (mgs./liter, unless otherwise noted)

Color (units)	ND	Chloride	180	Sulfate	130
Odor (cold)	III A	Suspended Solids	5	Grease & Oil	2877.8
Turbidity (units)	15	Ash	4	Cyanide	0.011
pH	9.2	Total Solids	730	Chromium Total	0.027
Acidity to pH 4		Ash	542	Chromium Hex.	ND
Alkalinity to pH 4		Total PO_4	0.38	Ortho - PO_4	0.09
Nitrite N		MBAS	<0.3	Copper	2.797
Nitrate N	4.5	Phenols		Lead	0.062
Ammonia N	28.0	COD	276	Arsenic	
Total Kjel. N	36.6	Iron	0.64	Zinc	0.064

Other Determinations
TIN 0.368
ALUMINUM 0.120
NICKEL 0.243
SILVER ND
CADMIUM 0.001
PETROLEUM HYDROCARBON

ND Not properly preserved

BIOCHEMICAL OXYGEN DEMAND (mgs./liter)

Field D.O.	Lab. D.O.			Seed Required:		Yes		No		
Sample Conc. % PLEASE CIRCLE	0.1	0.2	0.5	1.0	2.0	5.0	10	25	50	75	100
BOD_5											

S2B

PART 1-CHEMISTRY COPY

H1916

Chem-25
Sept. 75

MINOR

[illegible] MAJOR WASTEWATER ANALYSIS

MAR [illegible] 79
NJ DEPT ENV PROTECTION
DIV WATER RESOURCES
MS&E

Time & Date Received By Labs
Lab. No.

FIELD INFORMATION

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

Sample No. 03628

Date of Collection JAN 30 1979
Hour 11:00 A.M. P.M.
Composite Period GRAB Interval
Collected by R. Blunk
Residual Chlorine:
Immediate —
Developed —
Flow Rate —
Temperature —

Municipality BOONTON TWP.
Plant RFL
Stream TRIB to ROCKAWAY R.
Location
Description and Remarks: SAMPLE OF LAGOON, INFLUENT AREA

ITEMS CIRCLED BELOW ARE UNSATISFACTORY

Dilutions Requested (Bacteriological)	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

LABORATORY RESULTS
BACTERIOLOGICAL

Coliform MPN/100 ml. ______ (Confirmed Test); Fecal Coliform MPN/100 ml. ______
Fecal Streptococci:MPN/100 ml. ______ Other ______

ND = NON-DETECTABLE: I. E. BELOW DETECTABLE LIMITS SE MEMO # 4

FEB 27 1979

REPORT SUBMITTED DIV. OF LABORATORIES & EPID.

CHEMICAL AND PHYSICAL ANALYSES (mgs./liter, unless otherwise noted)

✓	Color (units)	5	✓	Chloride	60	✓	Sulfate	125		Other Determinations
✓	Odor (cold)	III A	✓	Suspended Solids	8	✓	Grease & Oil	353.6	✓	Zn 0.737
✓	Turbidity (units)	14	✓	Ash	6	✓	Cyanide	0.029	✓	ALUMINUM 0.092
✓	pH	9.2	✓	Total Solids	728	✓	Chromium Total	0.039	✓	NICKEL 0.252
	Acidity to pH 4		✓	Ash	538	✓	Chromium Hex.	ND	✓	SILVER ND
	Alkalinity to pH 4		✓	Total PO4	0.42	✓	Ortho - PO4	0.14	✓	CADMIUM 0.007
	Nitrite N		✓	MBAS	<0.3	✓	Copper	3.931		
✓	Nitrate N	4.6		Phenols		✓	Lead	0.095		
✓	Ammonia N	23.9	✓	COD	226		Arsenic			
✓	Total Kjel. N	36.6	✓	Iron	0.32	✓	Zinc	ND	✓	PETROLEUM HYDROCARBON

ND (NOT properly preserved

BIOCHEMICAL OXYGEN DEMAND (mgs./liter)

Field D.O.		Lab. D.O.			Seed Required:			Yes		No	
Sample Conc. %	PLEASE CIRCLE	0.1	0.2	0.5	1.0	2.0	5.0	10	25	50	75	100
BOD5												

S3C

H1916

PART 1-CHEMISTRY COPY

Chem-25
Sept. 75

STATE DEPARTMENT OF HEAL...

STREAM OR WASTEWATER ANALYSIS

MAR 1 ... 34 AM '79
NJ DEPT ENV PROTECTION
DIV WATER RESOURCES
MS&E

Time & Date Received By Labs ____
Lab. No. ____

FIELD INFORMATION

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

Date of Collection JAN 30 1979
Hour 10:40 A.M. ____ P.M. ____
Composite Period GRAB Interval -
Collected by [illegible]
Residual Chlorine:
Immediate -
Developed ____
Flow Rate -
Temperature -

Sample No. 03627
Municipality BOONTON TWP.
Plant RPL
Stream TRIB TO ROCKAWAY
Location ____
Description and Remarks: POND DISCHARGE, END OF PIPE

ITEMS CIRCLED BELOW ARE UNSATISFACTORY

Dilutions Requested (Bacteriological)

10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

LABORATORY RESULTS
BACTERIOLOGICAL

Coliform MPN/100 ml. ____ (Confirmed Test); Fecal Coliform MPN/100 ml. ____
Fecal Streptococci:MPN/100 ml. ____ Other ____

CHEMICAL AND PHYSICAL ANALYSES (mgs./liter, unless otherwise noted)

✓	Color (units) ND	✓	Chloride 16	✓	Sulfate 15		Other Determinations
✓	Odor (cold) IA	✓	Suspended Solids 2		Grease & Oil	✓	Tin ND
✓	Turbidity (units) 8	✓	Ash 1	✓	Cyanide ND	✓	Aluminum 0.144
✓	pH 6.6	✓	Total Solids 106	✓	Chromium Total 0.117	✓	Nickel 0.022
	Acidity to pH 4	✓	Ash 50	✓	Chromium Hex. ND	✓	Silver ND
	Alkalinity to pH 4	✓	Total PO4 ND	✓	Ortho - PO4 ND	✓	Cadmium 0.002
	Nitrite N	✓	MBAS <0.3	✓	Copper 0.008		
✓	Nitrate N ND		Phenols	✓	Lead ND		
✓	Ammonia N ND	✓	COD 4		Arsenic		ND = NON-DETECTABLE; I. E. BELOW DETECTABLE LIMITS RE MEMO # 4
✓	Total Kjel. N 0.72	✓	Iron 0.16	✓	Zinc 0.030		

FEB 27 1979
REPORT SUBMITTED
DIV. OF LABORATORIES & EPID.

BIOCHEMICAL OXYGEN DEMAND (mgs./liter)

Field D.O.	Lab. D.O.			Seed Required:			Yes		No		
Sample Conc. % PLEASE CIRCLE	0.1	0.2	0.5	1.0	2.0	5.0	10	25	50	75	100
BOD5											

52D

PART 1-CHEMISTRY COPY

Chem-25
Sept. 75

N JE EY STATE DEPARTMENT OF HEAL
OR WASTEWATER ANALYSIS

MAR 1 0 1979

Time & Date Received By Labs
Lab. No.

NJ DEPT ENV PROT
DIV WATER RESOURCES
MS&E

FIELD INFORMATION

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

Date of Collection JAN 30 1979
Hour 10:20 A.M. P.M.
Composite Period GRAB Interval
Collected by R. Plunt
Residual Chlorine:
Immediate –
Developed
Flow Rate –
Temperature –

Sample No. 03628
Municipality Boonton Twp.
Plant RFL
Stream Trib to Rockaway
Location
Description and Remarks: Pond influent

ITEMS CIRCLED BELOW ARE UNSATISFACTORY

Dilutions Requested (Bacteriological)

10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

LABORATORY RESULTS
BACTERIOLOGICAL

Coliform MPN/100 ml. (Confirmed Test); Fecal Coliform MPN/100 ml.
Fecal Streptococci:MPN/100 ml. Other

CHEMICAL AND PHYSICAL ANALYSES (mgs./liter, unless otherwise noted)

✓	Color (units) 5	✓	Chloride 11	✓	Sulfate 15.5		Other Determinations	
✓	Odor (cold) IA	✓	Suspended Solids 8		Grease & Oil		Tin	ND
✓	Turbidity (units) 16	✓	Ash 7	✓	Cyanide 0.005		Aluminum	0.192
✓	pH 7.1	✓	Total Solids 146	✓	Chromium Total 0.039		Nickel	0.013
	Acidity to pH 4	✓	Ash 20	✓	Chromium Hex. ND		Silver	ND
	Alkalinity to pH 4	✓	Total PO_4 0.06	✓	Ortho - PO_4 0.05		Cadmium	0.001
	Nitrite N	✓	MBAS <0.3	✓	Copper 0.005			
✓	Nitrate N ND		Phenols	✓	Lead ND			
✓	Ammonia N ND	✓	COD 4		Arsenic		ND = NON-DETECTABLE; I. E. BELOW	
✓	Total Kjel. N 0.39	✓	Iron 0.36	✓	Zinc ND		DETECTABLE LIMITS RE MEMO # 4	

FEB 27 1979
REPORT SUBMITTED
DIV. OF LABORATORIES & EPID.

BIOCHEMICAL OXYGEN DEMAND (mgs./liter)

Field D.O.	Lab. D.O.			Seed Required:			Yes	No			
Sample Conc. % PLEASE CIRCLE	0.1	0.2	0.5	1.0	2.0	5.0	10	25	50	75	100
BOD_5											

52E

H1

MOR 108 G

Date 3/1/78 Time 2:50

Sampling Team Stan + Dori

Well Sampling Sheet

1.) Use of Water ______ (i.e., Potable, Cooling, etc.)
2.) Type of Industry ______ (Product produced, or Supplier or Domestic)
3.) Geological Formation (aquifer)
4.) Station Number MOR 108G 5.) County Morris
6.) Total Depth ______ feet
7.) Owner Radio Freq Lab Mailing Address: Powerville
Town: Boonton Zip Code 07005 Phone: Area Code (201) 334-31
Owner Well Number ______ Name of Contact Jack Slater / Richard Seabury
8.) Location of Well (if different from above):
Town
9.) Location of Tap Sampled basement mo[illegible] building by tank
10.) Type of Well jet-driven to [illegible] (i.e., drilled, driven or dug)
11.) Type of Pump electric motor (i.e. vertical turbine, submersible, etc.)
Manufacturer Marlow
Pump Capacity 55 (not all consumed) gpm or hp.
13.) Electric and/or Telephone Grounding to Water System: Yes ______ No ______
14.) Type of Water Treatment Units (if any) none (charcoal filters or fu[illegible])
15.) Chlorine Dosage and Retention Time (wt/volume)
16.) Pumping Period before Sample Collection
A. Continuous ✓ B. Intermittent ______ C. Run for Sample ______
If B or C — How long before collection of sample ______ minutes.
17.) Holding Tank (i.e., Detention Tank) ______ Capacity ______ gallons.
18.) Temperature of Water Start 13 °C. Finish ______ °C
19.) pH 6.3 20.) Weather (i.e., Relati
21.) Describe immediate area around well

RFL Industries, Inc.

RICHARD W. SEABURY III
CORPORATE SECRETARY
VICE PRESIDENT, INDUSTRIAL RELATIONS

POWERVILLE ROAD
BOONTON, N. J. 07005

TEL: (201) 334-3100
TWX 710-987-8352

(NOTE: Is there any stockpiling of chemica[ls] the area paved or covered witg vegetation an[d] crops, etc.) in other words describe it!!)
22.) What is the ~~land use~~ in area surrounding th[e] industrial, commercial, other*)
*Describe private air strip, wooded
23.) Previous or current well problems: (including contamination, high mineral content, etc.)

24.) Additional Comments: corner-line last
wastewater treated in lagoon

25.) Sketch (on back) well, septic tanks, lagoons, vegetation, etc.

spring water well for process

gravel aquifer
30 ft down

ATTACHMENT S3 A water 5' ↓

GROUP I Conc: (μg/l)	[illegible]form	[illegible]D
	meth[illegible] chloride	ND
	methyl bromide	ND
	vinyl chloride	ND
	methylene chloride	ND
	chloroform	ND
	1,2 dichloroethane	ND
	1,1,1 trichloroethane	4.24
	carbontetrachloride	ND
	1,1,2 trichloroethylene	0.72
	dichlorobromomethane	ND
	1,1,2 trichloroethane	ND
	dibromochloromethane	ND
	1,2 dibromoethane	1.93
	1,1,2,2 tetrachloroethylene	
	bromoform	ND
	1,1,2,2 tetrachloroethane	ND
	diiodomethane	ND
	m-dichlorobenzene	ND
	p-dichlorobenzene	ND
	o-dichlorobenzene	ND
	1,2,4 trichlorobenzene	ND
GROUP II Conc: (μg/l)	Aroclor 1016	ND
	Aroclor 1242	ND
	Aroclor 1248	ND
	Aroclor 1254	ND
	α BHC	ND
	γ BHC (Lindane)	ND
	δ BHC	0.046
	heptachlor	ND
	aldrin	<0.010
	heptachlor epoxide	<0.010
	γ chlordane	<0.010
	p,p'- DDE	ND
	dieldrin	ND
	endrin	ND
	o,p' - DDT	ND
	p,p' - DDD	ND
	p,p' - DDT	ND
	mirex	ND
	methoxychlor	ND
	toxaphene	ND

53B

GROUP III Conc: (mg/l)	arsenic	<.001
	beryllium	<.001
	cadmium	<.001
	chromium	0.001
	copper	0.008
	lead	0.004
	nickel	<.002
	selenium	<.002
	zinc	0.012
GROUP IV Conc: (mg/l)	TOC	0.572
GROUP I: (Continued) Conc: (µg/l)	dichlorcethylene (gem)	ND
	dibromomethane	ND
	t-dichloroethylene	10.00

SSC

Arnold Schiffman
Director

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

SEP 1 2 1980

R.F.L. Industries, Inc.
Powerville Road
Boonton, New Jersey 07005

Attn: Mr. Richard Seabury III

Re: Wastewater Treatment Facility
R.F.L. Industries, Inc.
Boonton Township

Dear Mr. Seabury:

On July 10, 1980, a representative of this Division collected water samples from your groundwater monitoring wells, water supply wells and your wastewater lagoon (see attached analyses). Samples collected from your monitoring wells indicated that a severe groundwater pollution problem has resulted from the discharge of pollutional materials into your unlined lagoon.

At the time of the sampling, concentrations of 2607 parts per billion (ppb) of trichloroethane, 1,243 ppb of trichloroethylene, 21 ppb of toluene, 56 ppb of tetrachloroethylene, and 83 ppb of 1,1,2,2 tetrachloroethane were detected in your discharge into the wastewater lagoon. In addition, 971 ppb of 1,1,1 trichloroethane, 660 ppb of trichloroethylene, 26 ppb of toluene, 18 ppb of tetrachloroethylene and 1.7 ppb of o-xylene were detected in the wastewater lagoon itself. Trichloroethylene, toluene, and xylene are considered as hazardous substances by the New Jersey Department of Environmental Protection. Trichloroethane, trichloroethylene, toluene, and tetrachloroethylene are listed as toxic pollutants by the United States Environmental Protection Agency. Of even greater concern, however, is that the groundwaters in the general area are likewise exhibiting significant quantities of these and similar organic chemicals. Therefore, you are hereby directed to immediately cease all discharges of industrial wastewaters to the waters of the State via the unlined wastewater lagoon, and to dispose of these wastewaters in a manner acceptable to this Department. Furthermore, this Department may require the drilling of additional monitoring wells to determine the areal extent of RFL's contamination

ATTACHMENT S4A

of the groundwater aquifer. The Department may also require RFL to take additional steps to further safeguard and/or decontaminate the groundwaters affected by your lagoon.

This ban on the discharge of industrial wastewaters will continue in effect until such time as RFL provides proper and adequate wastewater treatment and disposal facilities, fully sanctioned by a Treatment Works Approval issued by this Division's Water Quality Management Element, and, if necessary and appropriate, a National Pollutant Discharge Elimination System permit from the U.S. Environmental Protection Agency. By copy of this correspondence, we are notifying Mr. Paul Kurisko, Chief of the Bureau of Industrial Waste Management, about the seriousness of this situation and requesting his staff's assistance in expediting the Treatment Works Approval process.

Failure to comply with the terms of this directive will result in the initiation of further enforcement action, which could include the assessment of Civil Administrative penalties, pursuant to N.J.S.A. 58:10A-1 et seq., and N.J.A.C. 7:14-8.1 et seq., under which you may be liable for penalties of up to $5,000 for each violation. Finally, be advised that compliance with this directive does not exempt RFL from compliance with any applicable rules or regulations of the Department, or from penalties for the pollution of the waters of the State, as discussed above.

Should you have any questions concerning this correspondence, please contact the writer or Mr. Joseph A. Miller, Supervisor, Enforcement Unit, Region IV, at (609) 292-0576.

Very truly yours,

Joseph M. Mikulka, Manager
Region IV
Western Bureau of Compliance
Enforcement Element

E34:G7

cc: Joseph A. Miller, Supervisor, Enforcement Unit, Region IV
~~Gregory Cunningham, Enforcement Unit, Region IV~~
Steven Johnson, Bureau of Groundwater Management
Paul Kurisko, Chief, Bureau of Industrial Waste Management

S4B

Sept. 75

SEP 17 10 02 AM '80
NJ DEPT ENV PROTECTION
DIV WATER RES
MS&E

Lab. No. ____

FIELD INFORMATION

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

Date of Collection JULY 11 1980

Hour 10:15 A.M. X P.M. ____

Sample No. C07487

Composite Period GRAB Interval ____

Collected by GREGORY CUNNINGHA

Residual Chlorine:
Immediate ____
Developed ____

Municipality BOONTON

Plant ~~[illegible]~~ RFL

Stream ____

Flow Rate ____

Location ____

Temperature ____

Description and Remarks: POND ADJACENT TO LAGOON

ITEMS CIRCLED BELOW ARE UNSATISFACTORY

Dilutions Requested (Bacteriological)

10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

LABORATORY RESULTS

BACTERIOLOGICAL

Coliform MPN/100 ml. ____ (Confirmed Test); Fecal Coliform MPN/100 ml. ____

Fecal Streptococci:MPN/100 ml. ____ Other ____

CHEMICAL AND PHYSICAL ANALYSES (mgs./liter, unless otherwise noted)

	Color (units)		Chloride		Sulfate		Other Determinations
	Odor (cold)		Suspended Solids		Grease & Oil	X	V.O. SCAN ppb
	Turbidity (units)		Ash		Cyanide		Toluene 26
	pH		Total Solids		Chromium Total		1,1,1 trichloroethane 97
	Acidity to pH 4		Ash		Chromium Hex.		trichloroethylene 66
	Alkalinity to pH 4		Total PO_4		Ortho - PO_4		tetrachloroethylene 1
	Nitrite N		MBAS		Copper		o-xylene
	Nitrate N		Phenols		Lead		
	Ammonia N		COD		Arsenic		ND = NON-DETECTABLE; I. E. BELOW
	Total Kjel. N		Iron		Zinc		DETECTABLE LIMITS SEE NOTE # 4

SEP 12 1980

REPORT SUBMITTED
DIV. OF LABORATORIES & EPID.

BIOCHEMICAL OXYGEN DEMAND (mgs./liter)

Field D.O.		Lab. D.O.			Seed Required:			Yes	No		
Sample Conc. %	PLEASE CIRCLE	0.1	0.2	0.5	1.0	2.0	5.0	10	25	50	75	100
BOD_5											

PART 1-CHEMISTRY COPY 54C

H1832

AUG 10 1 01 1 ?? ??
NJ DEPT ENV PROTECTION
DIV WATER RESOURCES
MS&E

Lab. No.

FIELD INFORMATION

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

Date of Collection JULY 10 1980
Hour 10:20 A.M. ✓ P.M.

Sample No. C07457

Composite Period GRAB Interval

Collected by GREGORY CUNNINGHAM

Residual Chlorine:
Immediate
Developed

Municipality BOONTON

Plant RFL

Stream

Flow Rate

Location Powerville Road -

Temperature

Description and Remarks: Lagoon

ITEMS CIRCLED BELOW ARE UNSATISFACTORY

Dilutions Requested (Bacteriological)

10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

LABORATORY RESULTS
BACTERIOLOGICAL

Coliform MPN/100 ml. (Confirmed Test); Fecal Coliform MPN/100 ml.

Fecal Streptococci:MPN/100 ml. Other

ND = NON-DETECTABLE; I. E. BELOW DETECTABLE LIMITS RE MEMO # 2

AUG 1 4 1980

REPORT SUBMITTED
DIV. OF LABORATORIES & EPID.

CHEMICAL AND PHYSICAL ANALYSES (mgs./liter, unless otherwise noted)

	Color (units)	X	Chloride 89		Sulfate		Other Determinations
	Odor (cold)		Suspended Solids		Grease & Oil	X	FLUORIDE 20.
	Turbidity (units)		Ash	X	Cyanide 0.001 K	X	ALUMINUM 0.164
	pH	X	Total Solids 520	X	Chromium Total 0.010	X	NICKEL 0.297
	Acidity to pH 4	X	Ash 366	X	Chromium Hex. 0.005 K	X	SILVER 0.009
	Alkalinity to pH 4	X	Total PO4 28.	X	Ortho - PO4 25.3	X	PETROLEUM HYDROCARB 1
X	~~Nitrite N~~ ~~Nitrate~~	X	MBAS 1.2	X	Copper 0.850	X	SPECIFIC CONDUCTIVITY 798.
X	Nitrate N 0.35	X	Phenols 0.052	X	Lead 0.051	X	TOC 34.5 J
X	Ammonia N 7.66		COD		Arsenic	X	V.O. Scan / ppb
	Total Kjel. N	X	Iron 0.391	X	Zinc 0.012		1,1,1 trichloroethane 9

trichloroethylene 6
TOLUENE
Tetrachloroethylene
O-xylene 1

BIOCHEMICAL OXYGEN DEMAND (mgs./liter)

Field D.O.	Lab. D.O.			Seed Required:			Yes		No		
Sample Conc. % PLEASE CIRCLE	0.1	0.2	0.5	1.0	2.0	5.0	10	25	50	75	100
BOD5											

PART 1-CHEMISTRY COPY 54D

H1916

Sept. 75

AUG 10

Lab. No.

FIELD INFORMATION

NJ DEPT ENV PROTECTION
DIV WATER RESOURCES
HS&E

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

Date of Collection JULY 10, 1980
Hour 9:30 A.M. ✓ P.M.
Composite Period GRAB Interval
Collected by G. CUNNINGHAM
Residual Chlorine:
Immediate
Developed
Flow Rate
Temperature

Sample No. C07451

Municipality BOONTON

Plant RFL

Stream

Location Powerville Road

Description and Remarks: discharge onto lagoon

ITEMS CIRCLED BELOW ARE UNSATISFACTORY

Dilutions Requested (Bacteriological)	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

LABORATORY RESULTS

BACTERIOLOGICAL

Coliform MPN/100 ml. (Confirmed Test); Fecal Coliform MPN/100 ml.

ND = NON-DETECTABLE, I. E. BELOW DETECTABLE LIMITS RE MEMO # 4

Fecal Streptococci:MPN/100 ml. Other

AUG 14 1980

REPORT SUBMITTED DIV. OF LABORATORIES & EPID.

CHEMICAL AND PHYSICAL ANALYSES (mgs./liter, unless otherwise noted)

	Color (units)		X	Chloride	18		Sulfate			Other Determinations
	Odor (cold)			Suspended Solids			Grease & Oil		X	FLUORIDE 2.0
	Turbidity (units)			Ash		X	Cyanide	0.001 K	X	ALUMINUM 0.001 K
	pH		X	Total Solids	304	X	Chromium Total	0.019	X	NICKEL 0.706
	Acidity to pH 4		X	Ash	164	X	Chromium Hex	0.005 K	X	SILVER 0.031
	Alkalinity to pH 4		X	Total PO4	2.3	X	Ortho - PO4	0.89	X	PETROLEUM HYDROCARBO
X	~~Nitrite N~~ ~~Nitrate~~		X	MBAS	0.7	X	Copper	13.278	X	SPECIFIC CONDUCTIVIT
X	Nitrate N	4.0	X	Phenols	0.039	X	Lead	2.973	X	TOC 14.2 J
X	Ammonia N	0.42		~~COD~~ G.C.			Arsenic		X	V.O. Scan / ppb
	Total Kjel. N		X	Iron	0.453	X	Zinc	0.047		1,1,1 trichloroethane 26

trichloroethylene 12
toluene
tetrachloroethylene
1,1,2,2 tetrachloroethane

BIOCHEMICAL OXYGEN DEMAND (mgs./liter)

Field D.O.		Lab. D.O.			Seed Required:			Yes		No	
Sample Conc. %	PLEASE CIRCLE	0.1	0.2	0.5	1.0	2.0	5.0	10	25	50	75	100
BOD5												

PART 1 CHEMISTRY COPY S4E

H1832

[illegible] of 2

TABULATION OF ANALYTICAL DATA FROM PUBLIC WATER SUPPLY

Supply KFL. County MORRIS

Municipality BOONTON Date Collected 7/1 1978

Collected by GREGORY CUNNINGHAM Memo # ______ Project # W- ______

BACTERIOLOGICAL ANALYSES: Coliform organisms determined by the membrane filter technique are reported in colonies per 100 ml. Chlorine residuals are reported in ppm.

Sample Number	Point of Collection	Time Collected	Coliform Organisms		Chlorine Residual	
			Fecal	Total	Free	Total
07454	Monitoring well #1	10:00 AM				
07460	Monitoring well #2	10:45 AM				
07464	Monitoring well #3	12:45 pm				
07472	Well north of MW #6	1:30 pm				
07475	Well at bld. #1	2:00 pm				
07479	Well at bld #14	2:30 pm				

PHYSICAL — CHEMICAL ANALYSES: Determinations are in ~~ppm~~ ppb except color, odor, turbidity, and pH. Figures in parentheses are from the N. J. Potable Water Standards and/or National Interim Primary Regulations.

Sample Number	7454	7460	7464	Sample Number	7472	7475	7479
Color (10)				Arsenic (0.05)		Feb.	2
Odor (III)				Barium (1.0)	[illegible]		
Turbidity (5)				Cadmium (0.010)			
pH				Chromium $^{+6}$ (0.05)			
Alkalinity to pH 4				Copper (1.0)			
Nitrate as NO_3 (45)				Cyanide (0.20)			
Chloride (250)			2.0	Lead (0.05)	1,2 dichloroethylene		
Total Dis. Solids (500)			2.6	Mercury (0.002)	1,1 dichloroethane		
ABS/LAS (0.5)		16.1		Selenium (0.01)	toluene		
Total Hardness (150)		26.0	6.0	Silver (0.05)	trichloroethylene		
Total Iron (0.3)		1.3		Phenol (0.001)	ethyl benzene		
Manganese (0.05)		2.5		Endrin (0.0002)	1,1,2 trichloroethane		
Sodium (50)		1.1		Lindane (0.004)	carbon tetrachloride		
Sulphate (250)		9.0		Methoxychlor (0,1)	1,2 dichloroethane		
Fluoride (2.0)		2.8	7.4	Toxaphene (0.005)	tetrachloroethylene		
Zinc (5.0)	1.1	1.7		2,4-D (0.1)	chloroform		
[illegible]	0.3			Silvex (0.01)	benzene		
[illegible]	2.3				trichlorofluoromethane		
	1.3	22.6	11.1		1,1,1 trichloroethane		
——		2.1			1,1 dichloroethylene		

Remarks ______

S4F

SHEET 2 — WATER PURVEYOR

TABULATION OF ANALYTICAL DATA FROM PUBLIC WATER SUPPLY

Supply ______________________________ County ______________

Municipality ______________________________ Date Collected ______________

Collected by ______________ Memo # ______________ Project # W- ______________

BACTERIOLOGICAL ANALYSES: Coliform organisms determined by the membrane filter technique are reported in colonies per 100 ml. Chlorine residuals are reported in ppm.

Sample Number	Point of Collection	Coliform Organisms		Chlorine Residual	
		Fecal	Total	Free	Total

PHYSICAL – CHEMICAL ANALYSES: Determinations are in ~~ppm~~ ppb except color, odor, turbidity, and pH. Figures in parentheses are from the N. J. Potable Water Standards.

Sample Number	7472	7475	7478			Sample Number	
Color (10)						Arsenic	
Odor (III)						Barium	
Turbidity (5)						Cadmium	
pH						Chromium +6	
Alkalinity to pH 4						Copper	
Nitrate as NO_3 (30)						Cyanide	
Chloride (250)						Lead	
Total Dis. Solids (500)						Mercury	
ABS/LAS (0.5)						~~Selenium~~	
Total Hardness (150)	3.2			methylene chloride		~~Silver~~	
Total Iron (0.3)	1.4			tetrachloroethylene		~~Zinc~~	
Manganese (0.05)	8.1	0.5	5.0	trichloroethylene			
Sodium (50)	8.3	1.3	9.8	1,1,1 trichloroethane			
Sulphate (250)			2.7	trichlorofluoromethane			
Fluoride (1.5)			0.9	carbon tetrachloride			
		3.4	1.3	1,1 dichloroethylene			
			1.2	chloroform			

Remarks ______________________________

546 SHEET 2 — WATER PURVEYOR

NEW JERSEY ST E EPARTMENT OF ENVIRONMEN OTECTION

TABULATION OF LYTICAL DATA FROM PUBLIC WATER PPLY

Supply [illegible] County [illegible]

Municipality [illegible]TON Date Collected [illegible]

Collected by [illegible] Memo # Project # W-

BACTERIOLOGICAL ANALYSES: Coliform organisms determined by the membrane filter technique are reported in colonies per 100 ml. Chlorine residuals are reported in ppm.

Sample Number	Point of Collection	Time Collected	Coliform Organisms Fecal	Coliform Organisms Total	Chlorine Residual Free	Chlorine Residual Total
07454	Monitoring well #1	10 AM				
07460	Monitoring well #2	10:45 AM				
07464	Monitoring well #3	12:45 pm				
07472	well north of bld #6	1:30 pm				
07475	well at bld #1	2 pm				
07479	well at bld #14	2:30 pm				

PHYSICAL — CHEMICAL ANALYSES: Determinations are in ~~ppm~~ ppb, except color, odor, turbidity, and pH. Figures in parentheses are from the N. J. Potable Water Standards and/or National Interim Primary Regulations.

Sample Number	7454	7460	7464	Sample Number	7472	7475	7479
Color (10)				Arsenic (0.05)		[illegible]	
Odor (III)				Barium (1.0)	Ale	~~[illegible]~~	
Turbidity (5)				Cadmium (0.010)			
pH				Chromium $^{+6}$ (0.05)			
Alkalinity to pH 4				Copper (1.0)			
Nitrate as NO_3 (45)				Cyanide (0.20)			
Chloride (250)			3.0	Lead (0.05)	1,2 dichloroethylene		
Total Dis. Solids (500)			2.6	Mercury (0.002)	1,1 dichloroethane		
ABS/LAS (0.5)		16.1		Selenium (0.01)	toluene		
Total Hardness (150)		26.0	6.0	Silver (0.05)	trichloroethylene		
Total Iron (0.3)		1.3		Phenol (0.001)	ethyl benzene		
Manganese (0.05)		2.5		Endrin (0.0002)	1,1,2 trichloroethane		
Sodium (50)		1.1		Lindane (0.004)	carbon tetrachloride		
Sulphate (250)		9.0		Methoxychlor (0,1)	1,2 dichloroethane		
Fluoride (2.0)		2.8	7.4	Toxaphene (0.005)	tetrachloroethylene		
Zinc (5.0)	1.1	1.7		2.4-D (0.1)	chloroform		
Volatiles	0.8			~~Silvex (0.01)~~	benzene		
Organics	2.3				trichlorofluoromethane		
[illegible]	1.3	22.6	11.1		1,1,1 trichloroethane		
		2.1			1,1 dichloroethylene		

Remarks

S4H SHEET 2 — WATER PURVEYOR

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TABULATION OF ANALYTICAL DATA FROM PUBLIC WATER SUPPLY

Supply ______________________ County ______________

Municipality ______________________ Date Collected ______________

Collected by ______________ Memo # ______________ Project # W- ______________

BACTERIOLOGICAL ANALYSES: Coliform organisms determined by the membrane filter technique are reported in colonies per 100 ml. Chlorine residuals are reported in ppm.

Sample Number	Point of Collection	Coliform Organisms		Chlorine Residual	
		Fecal	Total	Free	Total

PHYSICAL — CHEMICAL ANALYSES: Determinations are in ~~ppm~~ ppb except color, odor, turbidity, and pH. Figures in parentheses are from the N. J. Potable Water Standards.

Sample Number	7472	7415	7475			Sample Number	
Color (10)						Arsenic	
Odor (III)						Barium	
Turbidity (5)						Cadmium	
pH						Chromium +6	
Alkalinity to pH 4						Copper	
Nitrate as NO_3 (30)						Cyanide	
Chloride (250)						Lead	
Total Dis. Solids (500)						Mercury	
ABS/LAS (0.5)						Selenium	
Total Hardness (150)	3.2			methylene chloride		Silver	
Total Iron (0.3)	1.4			tetrachloroethylene		Zinc	
Manganese (0.05)	4.1	0.5	5.0	trichloroethylene			
Sodium (50)	8.3	1.3	9.8	1,1,1 trichloroethane			
Sulphate (250)			2.7	trichlorofluoromethane			
Fluoride (1.5)			0.9	carbon tetrachloride			
		3.4	1.3	1,1 dichloroethylene			
			1.2	Chloroform			

Remarks ______________________________

54I

SHEET 4 — BACTERIOLOGY LAB

JMM to GC c.c. info + return to JMM

RECEIVED
OCT 14 9 26 AM '80
NJ DEPT ... WATER RESOURCES
NLS & E

File

RFL Industries, Inc.
Boonton, New Jersey 07005 • Tel: (201) 334-3100 • TWX: 710-987-8352 • Cable: RADAIRCO, N. J.

October 9, 1980

Department of Environmental Protection
Division of Water Resources
P. O. Box CN-029
Trenton, New Jersey 08625

Attention: Mr. Joseph M. Mikulka, Manager
Region IV Western Bureau of Compliance

Dear Mr. Mikulka,

In reply to your letter of September 29, we herewith submit information and our plans regarding the three specific topics delineated at our meeting of September 25th.

1. Industrial waste waters discharged into our Boonton Township plant lagoon result from the manufacture of printed circuit boards and the chemical treatment of aluminum and steel preparatory to painting with water based acrylic paints. Virtually all of the 700 products presently assembled in our Boonton Township plant contain one or more circuit boards, and these boards are mounted in metal chassis and cabinets. In addition to supplying production quantities of these products, the facilities also serve our engineering department for experimental and prototype models. We became involved in these operations many years ago to preserve our required short lead times, quality, and competitive costs. We produce boards for our engineering department in less than a week and schedule production quantities as required by our master schedule within a two week period. Upon receipt of your September 12 letter, we contacted three PC board suppliers and requested prices and delivery on various quantities of 100 different boards. Their quoted deliveries ranged to two months, and their prices were unfavorable in comparison to our in-house costs.

Most damaging would be the effect, over the next few months, on our scheduled shipments (listed as BACKLOG on the enclosed SALES ORDER STATUS report as of 9/30/80) which are at the rate of $1,200,000 per month. Delivery delays would cause hardships to many of our customers, would adversely affect our reputation with these customers, and we would most certainly have to release many of our production and supervisory personnel, because there is no way to recoup the costs of lost shipments.

ATTACHMENT S5A

726

6/1/82 Receive equipment and begin installation.

8/1/82 Complete installation and test.

10/1/82 Start-up and achieve compliance.

We will be eager to shorten this schedule if information and approvals are received earlier than indicated from other parties.

Enclosed is a copy of test reports of waste water samples taken by Eastern Chemical on September 24 from the lagoon and point of discharge into the lagoon. In direct comparison with the state report, they indicate 560 ppb of trichloroethylene vs. 1243 ppb at point of discharge and 72 ppb vs. 660 ppb in the lagoon. For 1,1,1 - trichloroethane they tested 1700 ppb vs. 2607 at point of discharge and 220 ppb vs. 971 in the lagoon. We are still trying to determine the source of 1,1,1 - trichloroethane which does not exist in any of our process fluids according to our suppliers.

Sincerely yours,

RFL INDUSTRIES, INC.

Richard W. Seabury III
Vice President

RWSIII:wl

Enclosures (2)

SB

United States Testing Company, Inc.

Chemical Services Division

1415 PARK AVENUE • HOBOKEN, NEW JERSEY 07030 • 201-792-2400

REPORT OF TEST

October 1, 1980

NUMBER
63875

CLIENT: Eastern Chemical
P.O. Box 354, Park Station
Paterson, NJ 07513
Attention: Mr. Walter Witt

RFL INDUSTRIES, INC.
BOONTON, NEW JERSEY 07005

SUBJECT: Two (2) water samples supplied by the client and identified as:

1.) Lagoon and 2.) Point of Discharge.

AUTHORIZATION:

In person September 25, 1980.

PURPOSE:

To determine volatile organics present.

PROCEDURE:

The standard method of purge and trap by gas chromatography was used to determine volatile organics including trihalomethanes, and other volatile organics and several proirity pollutants.

SIGNED FOR THE COMPANY

BY W. S. Gilman

William S. Gilman

KVD

Laboratories in: New York • Chicago • Los Angeles • Tulsa • Memphis • Philadelphia • Richland

552

United States Testing Company, Inc.

CLIENT: Eastern Chemical

Number 63875

RFL INDUSTRIES, INC.
BOONTON, NEW JERSEY 07005

RESULTS:

Purge and Trap Volatiles
Concentration ppb by Weight)

Sample Identification	Retention Time	Lagoon A	Lagoon B	Point of Discharge A	Point of Discharge B
Vinyl Chloride	-				
Chloroethane	-				
Methylene Chloride	3.87	3.86	6	3.87	26
Unidentified		4.27	26	4.28	20
Unidentified				5.11	22
Trichlorofluoromethane	5.27				
1,1-Dichloroethylene	5.79				
1,1-Dichloroethane	7.01				
Unidentified				7.44	15
Trans-1,2-Dichloroethylene	7.75				
Chloroform	8.39				
Unidentified				8.83	47
1,2-Dichloroethane	9.32	9.29	7	9.30	26
1,1,1-Trichloroethane	11.02	11.04	220	11.10	1700
Carbon Tetrachloride	11.61				
Bromodichloromethane	12.39				
1,2-Dichloropropane	14.55				
Trans-1,3-Dichloropropene	15.09				
Trichloroethylene	16.21	16.23	72	16.24	560
Benzene	17.07				
Dibromochloromethane (1)	17.29				
Cis-1,3-Dichloropropene (1)					
1,1,2-Trichloroethane (1)					
2-Chloroethylvinyl Ether	19.41				
Unidentified		20.68	12	20.69	170
Bromoform	21.81				
Unidentified				23.10	37
1,1,2,2-Tetrachloroethene (2)	27.09			27.12	55
1,1,2,2-Tetrachloroethane (2)					
Toluene	29.59			29.63	19
Chlorobenzene	32.72				
Unidentified		35.58	50	35.56	200
Ethylbenzene	39.28			39.35	11

(A) Retention time (minutes) of peaks eluted.
(B) Concentration based on response of priority pollutant closest in retention time.
(1) Compounds elute together
(2) Compounds elute together

SSD

C732

RECEIVED

DEC 29 1 52 PM '80

NJ DEP ... MS&E

RFL Industries, Inc.

Boonton, New Jersey 07005 • Tel: (201) 334-3100 • TWX: 710-987-8352 • Cable: RADAIRCO, N. J.

December 22, 1980

Mr. Greg Cunningham
State of New Jersey
Department of Environmental Protection
Division of Water Resources
P.O. Box CN 029
Trenton, New Jersey 08625

Dear Mr. Cunningham:

In response to your telephone conversation with RFL's Mr. Jack Slater on December 22, 1980, please be advised of the following:

1. Enclosed is a copy of the analysis done by U.S. Testing dated November 5, 1980 on samples of RFL drinking water and from the lagoon (#63971).

2. Please note that we can see improvement over prior test data which is an indication that steps taken are effective in improving the lagoon.

3. Since we are shutting down the Printed Circuit Board Department on December 23, 1980 and moving same out of the Township, with your concurrence RFL is not testing the lagoon in December of 1980.

4. After flushing and resumed operations in January we will take point of discharge tests on the waste water from the metal finishing operations remaining in Boonton Township. This will be sent to you after analysis is completed.

5. All equipment to introduce an aeration jet into the discharge has arrived on site and must be installed, weather permitting, promptly.

6. During November, the AM Environmental Service, Inc. using special waste manifests removed 64 drums (55 gallon) of sludge to an approved site in Alabama. This cleaned up all wastes that RFL had been collecting in barrels for several years.

We trust that you will accept this progress report.

Best Wishes for the New Year.

Very truly yours,

RFL INDUSTRIES, INC.

Richard W. Seabury, III

Richard W. Seabury, III
Vice President

ATTACHMENT 56A

CLIENT: Eastern Chemical Co.

Number
63971

RESULTS:

Sample Identification	Retention Time	Drinking Well A *	Drinking Well B *	Sludge - Lagoon A	Sludge - Lagoon B
		(in ppb)		(in ppb)	
Priority pollutants purge and trap volatiles					
Chloromethane	1.57				
Unidentified				1.75	24
Vinyl Chloride	2.28				
Chloroethane	2.70				
Unidentified				2.86	69
Methylene Chloride	3.68			3.70	550
Unidentified				4.13	70
Unidentified				4.37	7
Unidentified				4.87	47
Trichlorofluoromethane	5.13				
1,1-Dichloroethylene	5.66				
1,1-Dichloroethane	6.85			6.88	48
trans-1,2-Dichloroethylene	7.65				
Chloroform	8.23				
1,2-Dichloroethane	9.18			9.21	18
1,1,1-Trichloroethane	10.85			10.91	510
Carbon Tetrachloride	11.45				
Bromodichloromethane	12.21				
Unidentified				13.16	52
1,2-Dichloropropane	14.43				
trans-1,3-Dichloropropene	14.92				
Trichloroethylene	16.09			16.14	230
Benzene (1)	17.08				
Dibromochloromethane (1)					
cis-1,3-Dichloropropene (1)					
1,1,2-Trichloroethane (1)					
2-Chloroethylvinyl Ether	19.28				
Unidentified				21.23	8
Bromoform	21.58				
1,1,2,2-Tetrachloroethene (2)	27.00				
1,1,2,2-Tetrachloroethane (2)					
Toluene	29.58				
Chlorobenzene	32.66				
Unidentified				35.45	34
Ehtylbenzene	39.23				

* Values detected were below our detection limit of 5 ppb.

56B

Sample source: RFL Industries, Inc., Boonton, New Jersey

Sample date: May 1, 1981

Taken by: ICM, Randolph, New Jersey

Tested by: ICM, Randolph, New Jersey

	Results PPB		
	Monitor Well (1)	Monitor Well (2)	Monitor Well (3)
O-xylene	ND	ND	ND
M-xylene	ND	ND	ND
Tetrachloroethylene	ND	ND	ND
Ethyl benzene	ND	ND	ND
Toluene	ND	ND	ND
1,1,2,2 tetrachloroethane	ND	ND	ND
Benzene	ND	ND	ND
Trichloroethylene	ND	5.6	49
Carbon tetrachloride	ND	ND	ND
1,1,1 trichloroethane	ND	3.4	21.3
1,2 dichloroethane	ND	ND	ND
Chloroform	ND	ND	ND
1,2 dichloroethylene	ND	3.7	3.3
1,1 dichloroethane	ND	2.7	27.2
1,1 dichloroethylene	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND
Methylene chloride	ND	ND	9.8

ATTACHMENT S7A

ATTACHMENT D

BACKGROUND WATER QUALITY DATA

The following is a summary of the water quality data taken on site during the past three years (1982, 1983, 1984). Eight sampling locations have been monitored regularly.

1 - upstream surface water
2 - monitor well #1
3 - monitor well #2
4 - monitor well #3
5 - monitor well #4
6 - downstream, about 300 feet from lagoon
7 - downstream, at Valley Road, about 2000 feet
8 - lagooned water in evaporation pond

All of the above locations can be found on the General Site Plan in Attachment F. All of the analyses summarized herein have been performed by:

Industrial Corrosion Management Corporation
1152 Route 10
Randolph, New Jersey 07869

State Lab Certification Number 14116

Original testing results can be supplied upon request.

ATTACHMENT 58A

- U. STREAM SURFACE WATER -

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

PPB UNITS UNLESS NOTED	ANALYSIS	July 14, 1982	Aug. 26, 1982	DEC. 15, 1982	MAY 12, 1983	Aug. 24, 1983	DEC 15, 1983
	CHLOROMETHANE					NO SAMPLE COLLECTED (STREAM WAS DRIED UP)	
	BROMOMETHANE						
	DICHLORODIFLUOROMETHANE						
	VINYL CHLORIDE						
	CHLOROETHANE						
	METHYLENE CHLORIDE						
	ACETONE						
	TRICHLOROFLUOROMETHANE						
	1,1-DICHLOROETHYLENE						
	1,1-DICHLOROETHANE						
	t-1,2-DICHLOROETHYLENE						
	CHLOROFORM		0.4				
	FREON 113		<10.0				
	1,2-DICHLOROETHANE						
	t-BUTYL METHYL ETHER						
	1,1,1-TRICHLOROETHANE		0.3				
	CARBON TETRACHLORIDE						
	BROMODICHLOROMETHANE						
	1,2-DICHLOROPROPANE						
	c-1,3-DICHLOROPROPENE						
	t-1,3-DICHLOROPROPENE						
	TCE (TRICHLOROETHYLENE)						
	1,1,2-TRICHLOROETHANE						
	DIBROMOCHLOROMETHANE						
	BENZENE						
	DIISOPROPYL ETHER						
	2-CHLOROETHYLVINYL ETHER						
	HEXANE						
	BROMOFORM						
	1,1,2,2-TETRACHLOROETHANE						
	PCE (TETRACHLOROETHYLENE)						
	HEPTANE						
	TOLUENE						
	CHLOROBENZENE						
	ETHYLBENZENE						
	(UNKNOWN PEAKS)		Yes				

SEB

UPSTREAM SURFACE WATER

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

PPB UNITS UNLESS NOTED	ANALYSIS	Apr. 17, 1984	July 17, 1984	Oct 11, 1984	Oct 29, 1984
	CHLOROMETHANE				
	BROMOMETHANE				
	DICHLORODIFLUOROMETHANE				
	VINYL CHLORIDE				
	CHLOROETHANE				
	METHYLENE CHLORIDE				
	ACETONE				
	TRICHLOROFLUOROMETHANE				
	1,1-DICHLOROETHYLENE			SAMPLE NOT TAKEN ON THIS DATE	
	1,1-DICHLOROETHANE				
	t-1,2-DICHLOROETHYLENE				
	CHLOROFORM				
	FREON 113				
	1,2-DICHLOROETHANE				
	t-BUTYL METHYL ETHER				
	1,1,1-TRICHLOROETHANE				
	CARBON TETRACHLORIDE				
	BROMODICHLOROMETHANE				
	1,2-DICHLOROPROPANE				
	C-1,3-DICHLOROPROPENE				
	t-1,3-DICHLOROPROPENE				
	TCE (TRICHLOROETHYLENE)				
	1,1,2-TRICHLOROETHANE				
	DIBROMOCHLOROMETHANE				
	BENZENE				
	DIISOPROPYL ETHER				
	2-CHLOROETHYLVINYL ETHER				
	HEXANE				
	BROMOFORM				
	1,1,2,2-TETRACHLOROETHANE				
	PCE (TETRACHLOROETHYLENE)				
	HEPTANE				
	TOLUENE				
	CHLOROBENZENE				
	ETHYLBENZENE				
	(UNKNOWN PEAKS)				

58C

— UPSTREAM SURFACE WATER —

UNITS	ANALYSIS		AUG. 26, 1982	DEC 15, 1982	MAY 12, 1983	AUG 24, 1983	DEC 15, 1983
PPM	HEXAVALENT CHROMIUM		<0.01	<0.05	<0.05	NO SAMPLE - STREAM DRIED UP.	<0.05
PPM	CHROMIUM		0.0082	<0.0005	0.005		0.002
PPM	LEAD		<0.002	0.009	<0.004		0.002
PPM	NICKEL		<0.026	<0.002	<0.002		<0.002
PPM	FLUORIDE		0.122	0.11	0.115		0.065
PPM	CHLORIDE		8.18	10.1	8.93		10.5
PPM	TOT. DISSOLVED SOLIDS		43.0	118.0	69.0		104.0
PPM	NITRATE		<0.015	0.15	1.29		<0.7
UNITS	pH		7.37	6.84	7.90		6.34
PPM	OIL & GREASE		<0.1	0.54	<0.1		<0.1

UNITS	ANALYSIS	APR. 17, 1984	July 17, 1984	Oct 11, 1984	Oct 29, 1984
PPM	HEXAVALENT CHROMIUM	<0.05	<0.05	NOT SAMPLED	<0.05
PPM	CHROMIUM	0.003	0.002		0.003
PPM	LEAD	<0.003	<0.004		<0.003
PPM	NICKEL	0.006	<0.002		<0.003
PPM	FLUORIDE	0.520	0.130		0.420
PPM	CHLORIDE	10.1	4.90		7.3
PPM	TOT. DISSOLVED SOLIDS	51.3	204.0		96.0
PPM	NITRATE	<0.7	15.98		<0.7
UNITS	pH	6.39	6.32		6.01
PPM	OIL & GREASE	<0.1	<0.1		1.74

58D

— MONITOR WELL MW-1 —

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

PPB UNITS UNLESS NOTED	ANALYSIS	July 14, 1982	Aug 26, 1982	DEC. 15, 1982	MAY 12, 1983	Aug 24, 1983	DEC 15, 1983
	CHLOROMETHANE						
	BROMOMETHANE						
	DICHLORODIFLUOROMETHANE						
	VINYL CHLORIDE						
	CHLOROETHANE						
	METHYLENE CHLORIDE						
	ACETONE						
	TRICHLOROFLUOROMETHANE						
	1,1-DICHLOROETHYLENE						
	1,1-DICHLOROETHANE	69.6					
	t-1,2-DICHLOROETHYLENE						
	CHLOROFORM						
	FREON 113						
	1,2-DICHLOROETHANE						
	t-BUTYL METHYL ETHER						
	1,1,1-TRICHLOROETHANE						
	CARBON TETRACHLORIDE						
	BROMODICHLOROMETHANE						
	1,2-DICHLOROPROPANE						
	C-1,3-DICHLOROPROPENE						
	t-1,3-DICHLOROPROPENE						
	TCE (TRICHLOROETHYLENE)						
	1,1,2-TRICHLOROETHANE						
	DIBROMOCHLOROMETHANE						
	BENZENE						
	DIISOPROPYL ETHER						
	2-CHLOROETHYLVINYL ETHER						
	HEXANE						
	BROMOFORM						
	1,1,2,2-TETRACHLOROETHANE						
	PCE (TETRACHLOROETHYLENE)						
	HEPTANE						
	TOLUENE						
	CHLOROBENZENE						
	ETHYLBENZENE						
	(UNKNOWN PEAKS)		YES				Yes
	TOTAL PPB	69.6	0.0	0.0	0.0	0.0	0.0

S8E

– NITOR WELL – MW-1

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

	PPB UNITS UNLESS NOTED	ANALYSIS	APR 17, 1984	July 17, 1984	Oct 11, 1984	Oct 29, 1984
1		CHLOROMETHANE				VOL. ORGANICS NOT TESTED ON THIS DATE
2		BROMOMETHANE				
3		DICHLORODIFLUOROMETHANE				
4		VINYL CHLORIDE				
5		CHLOROETHANE				
6		METHYLENE CHLORIDE				
7		ACETONE				
8		TRICHLOROFLUOROMETHANE				
9		1,1-DICHLOROETHYLENE				
10		1,1-DICHLOROETHANE				
11		t-1,2-DICHLOROETHYLENE				
12		CHLOROFORM				
13		FREON 113				
14		1,2-DICHLOROETHANE				
15		t-BUTYL METHYL ETHER				
16		1,1,1-TRICHLOROETHANE				
17		CARBON TETRACHLORIDE				
18		BROMODICHLOROMETHANE				
19		1,2-DICHLOROPROPANE				
20		c-1,3-DICHLOROPROPENE				
21		t-1,3-DICHLOROPROPENE				
22		TCE (TRICHLOROETHYLENE)				
23		1,1,2-TRICHLOROETHANE		9.4		
24		DIBROMOCHLOROMETHANE				
25		BENZENE				
26		DIISOPROPYL ETHER				
27		2-CHLOROETHYLVINYL ETHER				
28		HEXANE				
29		BROMOFORM				
30		1,1,2,2-TETRACHLOROETHANE				
31		PCE (TETRACHLOROETHYLENE)				
32		HEPTANE				
33		TOLUENE				
34		CHLOROBENZENE				
35		ETHYLBENZENE				
36		(UNKNOWN PEAKS)				
37						
38		TOTAL PPB	0.0	9.4	0.0	—
39						
40						

S8F

MONITOR WELL MW-1

UNITS	ANALYSIS	1	AUG 26, 1982	DEC 15, 1982	MAY 12, 1983	AUG 24, 1983	DEC 15, 1983
PPM	HEXAVALENT CHROMIUM		<0.01	<0.05	<0.05	<0.05	<0.05
PPM	CHROMIUM		0.0259	0.009	0.009	0.011	0.007
PPM	LEAD		0.014	0.094	<0.004	0.003	0.029
PPM	NICKEL		0.012	0.007	<0.002	0.008	<0.002
PPM	FLUORIDE		0.085	0.1	0.012		0.088
PPM	CHLORIDE		5.45	7.49	9.43	11.3	7.2
PPM	TOT. DISSOLVED SOLIDS		33.0	92.0	58.6	30.0	124.0
PPM	NITRATE		0.224	0.69	0.634	<0.700	<0.7
UNITS	pH		6.74	6.32	6.66	6.72	6.52
PPM	OIL & GREASE		<0.1	1.77	<0.1	<0.1	<0.1

UNITS	ANALYSIS	APR. 17, 1984	JULY 17, 1984	OCT 11, 1984	OCT 29, 1984
PPM	HEXAVALENT CHROMIUM	<0.05	<0.05	<0.05	NOT SAMPLED
PPM	CHROMIUM	0.024	0.005	0.012	
PPM	LEAD	0.064	0.011	0.006	
PPM	NICKEL	0.007	0.003	<0.004	
PPM	FLUORIDE	0.120	0.060	0.035	
PPM	CHLORIDE	5.39	6.32	5.42	
PPM	TOT. DISSOLVED SOLIDS	89.5	226.0	101.0	
PPM	NITRATE	<0.7	4.0	<0.7	
UNITS	pH	6.24	6.12	5.86	
PPM	OIL & GREASE	<0.1	5.20	0.275	

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- NITOR WELL MW-2 -

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

	PPB UNITS UNLESS NOTED	ANALYSIS	July 14, 1982	Aug 26, 1982	DEC. 15, 1982	MAY 12, 1983	AUG. 24 1983	DEC 15, 1983
1		CHLOROMETHANE						
2		BROMOMETHANE						
3		DICHLORODIFLUOROMETHANE						
4		VINYL CHLORIDE						
5		CHLOROETHANE				101.3	0.3	
6		METHYLENE CHLORIDE	45.0		19.6	38.1		
7		ACETONE						
8		TRICHLOROFLUOROMETHANE						
9		1,1-DICHLOROETHYLENE	3.7	1.0	1.0	7.2	2.4	
10		1,1-DICHLOROETHANE	40.9	11.3	10.3	270.3	38.3	3.4
11		t-1,2-DICHLOROETHYLENE	1.5	1.5	2.8	149.3	9.7	3.8
12		CHLOROFORM						
13		FREON 113		<150.0	556.0	80.1	223.0	67.5
14		1,2-DICHLOROETHANE						
15		t-BUTYL METHYL ETHER						
16		1,1,1-TRICHLOROETHANE	401.6	62.6	44.6	427.6	464.0	6.9
17		CARBON TETRACHLORIDE						
18		BROMODICHLOROMETHANE						
19		1,2-DICHLOROPROPANE						
20		c-1,3-DICHLOROPROPENE						
21		t-1,3-DICHLOROPROPENE						
22		TCE (TRICHLOROETHYLENE)	11.9	7.0	5.3	66.9	37.9	32.2
23		1,1,2-TRICHLOROETHANE	2.2					
24		DIBROMOCHLOROMETHANE						
25		BENZENE						
26		DIISOPROPYL ETHER						
27		2-CHLOROETHYLVINYL ETHER						
28		HEXANE						
29		BROMOFORM						
30		1,1,2,2-TETRACHLOROETHANE						
31		PCE (TETRACHLOROETHYLENE)	0.7			4.1	2.0	1.6
32		HEPTANE						
33		TOLUNE						
34		CHLOROBENZENE						
35		ETHYLBENZENE						
36		(UNKNOWN PEAKS)		<Yes>	Yes	Yes	Yes	Yes
37								
38		TOTAL PPB	507.7	<233.4	639.6	1068.4	777.6	115.4
39								
40		58H						

- NITOR WELL : MW-2

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

	PPB UNITS UNLESS NOTED	ANALYSIS	1 Apr. 17, 1984	2 July 17, 1984	3 Oct. 11, 1984	4 Oct 29, 1984	5	6
1		CHLOROMETHANE						
2		BROMOMETHANE						
3		DICHLORODIFLUOROMETHANE						
4		VINYL CHLORIDE						
5		CHLOROETHANE						
6		METHYLENE CHLORIDE			15.0			
7		ACETONE						
8		TRICHLOROFLUOROMETHANE						
9		1,1-DICHLOROETHYLENE			12.0	6.0		
10		1,1-DICHLOROETHANE	3.4	3.5	67.0	22.0		
11		t-1,2-DICHLOROETHYLENE	3.4	16.0	21.0	12.0		
12		CHLOROFORM						
13		FREON 113	5.5					
14		1,2-DICHLOROETHANE						
15		t-BUTYL METHYL ETHER						
16		1,1,1-TRICHLOROETHANE	6.1	9.0	1372.0	235.0		
17		CARBON TETRACHLORIDE						
18		BROMODICHLOROMETHANE						
19		1,2-DICHLOROPROPANE						
20		c-1,3-DICHLOROPROPENE						
21		t-1,3-DICHLOROPROPENE						
22		TCE (TRICHLOROETHYLENE)	21.4	11.0	163.0	102.0		
23		1,1,2-TRICHLOROETHANE		9.7				
24		DIBROMOCHLOROMETHANE						
25		BENZENE						
26		DIISOPROPYL ETHER						
27		2-CHLOROETHYLVINYL ETHER						
28		HEXANE						
29		BROMOFORM						
30		1,1,2,2-TETRACHLOROETHANE						
31		PCE (TETRACHLOROETHYLENE)	1.3		3.0	3.0		
32		HEPTANE						
33		TOLUENE						
34		CHLOROBENZENE						
35		ETHYLBENZENE						
36		(UNKNOWN PEAKS)	YES					
37								
38		TOTAL PPB	10.0	49.2	1653.0	380.0		
39								
40								

S8 I

MONITOR WELL - MW-2

UNITS	ANALYSIS		AUG 26, 1982	DEC 15, 1982	MAY 12, 1983	AUG 24, 1983	DEC 15, 1983
PPM	HEXAVALENT CHROMIUM		<0.01	<0.05	<0.05	<0.05	<0.05
PPM	CHROMIUM		0.0289	0.008	0.005	0.008	0.007
PPM	LEAD		0.064	0.036	0.004	0.011	0.023
PPM	NICKEL		0.032	<0.002	<0.002	<0.002	0.006
PPM	FLUORIDE		0.145	0.19	0.169		0.103
PPM	CHLORIDE		26.0	31.6	20.8	30.5	34.3
PPM	TOT. DISSOLVED SOLIDS		149.0	189.0	178.0	169.0	258.0
PPM	NITRATE		0.224	5.1	0.45	0.726	5.52
UNITS	pH		6.8	6.69	6.57	6.41	6.47
PPM	OIL & GREASE		<0.1	4.75	0.38	<0.1	<0.1

UNITS	ANALYSIS	APR. 17, 1984	JULY 17, 1984	SEPT 24, 1984	OCT 11, 1984
PPM	HEXAVALENT CHROMIUM	<0.05	<0.05		<0.05
PPM	CHROMIUM	0.003	0.008		0.008
PPM	LEAD	0.014	126.0	0.009	<0.002
PPM	NICKEL	0.008	0.021		<0.004
PPM	FLUORIDE	0.310	0.080		0.078
PPM	CHLORIDE	12.9	9.13		17.2
PPM	TOT. DISSOLVED SOLIDS	133.0	192.0		204.0
PPM	NITRATE	1.1	1.14		0.850
UNITS	pH	6.45	6.34		5.99
PPM	OIL & GREASE	9.11	2.65		<0.1

S8J

– NITOR WELL MW-3 –

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

PPB UNITS UNLESS NOTED	ANALYSIS	July 14, 1982	Aug 26, 1982	DEC. 15, 1982	MAY 12, 1983	Aug 24, 1983	DEC 15, 1983
	CHLOROMETHANE						
	BROMOMETHANE						
	DICHLORODIFLUOROMETHANE						
	VINYL CHLORIDE						
	CHLOROETHANE						
	METHYLENE CHLORIDE			58.7			
	ACETONE						
	TRICHLOROFLUOROMETHANE						
	1,1-DICHLOROETHYLENE						
	1,1-DICHLOROETHANE	133.5	122.6	3.4			
	t-1,2-DICHLOROETHYLENE			4.0			
	CHLOROFORM						
	FREON 113				1.1		
	1,2-DICHLOROETHANE						
	t-BUTYL METHYL ETHER						
	1,1,1-TRICHLOROETHANE				0.7		
	CARBON TETRACHLORIDE		0.3	3.7			
	BROMODICHLOROMETHANE			84.5			
	1,2-DICHLOROPROPANE						
	c-1,3-DICHLOROPROPENE						
	t-1,3-DICHLOROPROPENE						
	TCE (TRICHLOROETHYLENE)	5.65	4.9	17.7	2.3	2.7	4.3
	1,1,2-TRICHLOROETHANE						
	DIBROMOCHLOROMETHANE						
	BENZENE						
	DIISOPROPYL ETHER						
	2-CHLOROETHYLVINYL ETHER						
	HEXANE						
	BROMOFORM						
	1,1,2,2-TETRACHLOROETHANE						
	PCE (TETRACHLOROETHYLENE)			1.5			
	HEPTANE						
	TOLUNE						
	CHLOROBENZENE						
	ETHYLBENZENE						
	(UNKNOWN PEAKS)		YES	YES			
	TOTAL PPB	139.15	127.8	173.5	4.1	2.7	4.3

SRK

2 of 3

– M ITOR WELL MW-3 –

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

PPB UNITS UNLESS NOTED	ANALYSIS	Apr. 17, 1984	July 17, 1984	Oct. 11, 1984	Oct. 29, 1984
	CHLOROMETHANE				
	BROMOMETHANE				
	DICHLORODIFLUOROMETHANE				
	VINYL CHLORIDE				
	CHLOROETHANE				
	METHYLENE CHLORIDE				
	ACETONE				
	TRICHLOROFLUOROMETHANE				
	1,1-DICHLOROETHYLENE				
	1,1-DICHLOROETHANE				
	t-1,2-DICHLOROETHYLENE				
	CHLOROFORM				
	FREON 113				
	1,2-DICHLOROETHANE				
	t-BUTYL METHYL ETHER				
	1,1,1-TRICHLOROETHANE			2.0	
	CARBON TETRACHLORIDE				
	BROMODICHLOROMETHANE				
	1,2-DICHLOROPROPANE				
	c-1,3-DICHLOROPROPENE				
	t-1,3-DICHLOROPROPENE				
	TCE (TRICHLOROETHYLENE)	0.97		9.0	3.0
	1,1,2-TRICHLOROETHANE				
	DIBROMOCHLOROMETHANE				
	BENZENE				
	DIISOPROPYL ETHER				
	2-CHLOROETHYLVINYL ETHER				
	HEXANE				
	BROMOFORM				
	1,1,2,2-TETRACHLOROETHANE				
	PCE (TETRACHLOROETHYLENE)				
	HEPTANE				
	TOLUENE				
	CHLOROBENZENE				
	ETHYLBENZENE				
	(UNKNOWN PEAKS)				
	TOTAL PPB	0.97	0.0	11.0	3.0

SRL

UNITS	ANALYSIS	AUG 26, 1982	DEC 15, 1982	MAY 12, 1983	AUG 24, 1983	DEC 15, 1983
PPM	HEXAVALENT CHROMIUM	<0.01	<0.05	<0.05	<0.05	<0.05
PPM	CHROMIUM	0.0093	0.002	0.007	0.007	0.013
PPM	LEAD	0.037	0.006	0.004	0.050	0.006
PPM	NICKEL	0.0026	0.010	<0.002	0.007	0.002
PPM	FLUORIDE	0.307	0.41	0.390		0.172
PPM	CHLORIDE	6.0	21.7	4.96	7.38	7.6
PPM	TOT. DISSOLVED SOLIDS	41.0	227.0	57.1	29.2	163.0
PPM	NITRATE	0.821	0.46	0.26	0.738	<0.7
UNITS	pH	5.86	5.74	6.08	5.53	6.39
PPM	OIL & GREASE	<0.1	3.38	<0.1	<0.1	<0.1

UNITS	ANALYSIS	APR. 17, 1984	JULY 17, 1984	OCT 11, 1984	OCT 29, 1984
PPM	HEXAVALENT CHROMIUM	<0.05	<0.05	<0.05	
PPM	CHROMIUM	0.003	0.002	0.018	
PPM	LEAD	0.005	0.018	0.028	0.004
PPM	NICKEL	0.009	<0.002	<0.004	
PPM	FLUORIDE	0.350	0.180	0.440	
PPM	CHLORIDE	3.98	3.04	4.01	
PPM	TOT. DISSOLVED SOLIDS	50.5	173.0	79.6	
PPM	NITRATE	<0.7	<0.7	<0.7	
UNITS	pH	6.17	5.64	5.09	
PPM	OIL & GREASE	3.94	0.793	<0.1	

S8M

ONITOR WELL - MW-4

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

PPB UNITS UNLESS NOTED	ANALYSIS	1	2	3	4	5 AUG 24, 1983	6 DEC 15, 1983
	CHLOROMETHANE						
	BROMOMETHANE						
	DICHLORODIFLUOROMETHANE						
	VINYL CHLORIDE						
	CHLOROETHANE						
	METHYLENE CHLORIDE						
	ACETONE						
	TRICHLOROFLUOROMETHANE						
	1,1-DICHLOROETHYLENE						
	1,1-DICHLOROETHANE						
	t-1,2-DICHLOROETHYLENE						
	CHLOROFORM						
	FREON 113						
	1,2-DICHLOROETHANE						
	t-BUTYL METHYL ETHER						
	1,1,1-TRICHLOROETHANE						
	CARBON TETRACHLORIDE						
	BROMODICHLOROMETHANE						
	1,2-DICHLOROPROPANE						
	c-1,3-DICHLOROPROPENE						
	t-1,3-DICHLOROPROPENE						
	TCE (TRICHLOROETHYLENE)						
	1,1,2-TRICHLOROETHANE						
	DIBROMOCHLOROMETHANE						
	BENZENE						
	DIISOPROPYL ETHER						
	2-CHLOROETHYLVINYL ETHER						
	HEXANE						
	BROMOFORM						
	1,1,2,2-TETRACHLOROETHANE						
	PCE (TETRACHLOROETHYLENE)						
	HEPTANE						
	TOLUENE						
	CHLOROBENZENE						
	ETHYLBENZENE						
	(UNKNOWN PEAKS)						
	TOTAL PPB					0.0	0.0

S8N

ONITOR WELL MW-4

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

	PPB UNITS UNLESS NOTED	ANALYSIS	Apr. 17, 1984	July 17, 1984	Oct 11, 1984	Oct. 29, 1984		
1		CHLOROMETHANE				VOL. ORGANICS NOT TESTED ON THIS DATE		
2		BROMOMETHANE						
3		DICHLORODIFLUOROMETHANE						
4		VINYL CHLORIDE						
5		CHLOROETHANE						
6		METHYLENE CHLORIDE						
7		ACETONE						
8		TRICHLOROFLUOROMETHANE						
9		1,1-DICHLOROETHYLENE						
10		1,1-DICHLOROETHANE						
11		t-1,2-DICHLOROETHYLENE						
12		CHLOROFORM						
13		FREON 113						
14		1,2-DICHLOROETHANE						
15		t-BUTYL METHYL ETHER						
16		1,1,1-TRICHLOROETHANE						
17		CARBON TETRACHLORIDE						
18		BROMODICHLOROMETHANE						
19		1,2-DICHLOROPROPANE						
20		c-1,3-DICHLOROPROPENE						
21		t-1,3-DICHLOROPROPENE						
22		TCE (TRICHLOROETHYLENE)						
23		1,1,2-TRICHLOROETHANE						
24		DIBROMOCHLOROMETHANE						
25		BENZENE						
26		DIISOPROPYL ETHER						
27		2-CHLOROETHYLVINYL ETHER						
28		HEXANE						
29		BROMOFORM						
30		1,1,2,2-TETRACHLOROETHANE						
31		PCE (TETRACHLOROETHYLENE)						
32		HEPTANE						
33		TOLUNE						
34		CHLOROBENZENE						
35		ETHYLBENZENE						
36		(UNKNOWN PEAKS)		YES				
37								
38		TOTAL PPB	0.0	0.0	0.0	—		
39								
40								

580

— MONITOR WELL — MW-4

UNITS	ANALYSIS					AUG 24, 1983	DEC 15, 1983
PPM	HEXAVALENT CHROMIUM					<0.05	<0.05
PPM	CHROMIUM					0.008	0.012
PPM	LEAD					0.036	0.058
PPM	NICKEL					0.024	0.011
PPM	FLUORIDE						0.101
PPM	CHLORIDE					11.3	4.8
PPM	TOT. DISSOLVED SOLIDS					42.0	144.0
PPM	NITRATE					<0.700	2.92
UNITS	pH					6.95	6.68
PPM	OIL & GREASE					5.35	<0.1

UNITS	ANALYSIS	APR. 17, 1984	JULY 17, 1984	OCT 11, 1984	OCT 29, 1984
PPM	HEXAVALENT CHROMIUM	<0.05	<0.05	<0.05	NOT SAMPLED
PPM	CHROMIUM	0.044	0.021	0.005	
PPM	LEAD	0.068	0.037	<0.002	
PPM	NICKEL	0.017	0.004	<0.004	
PPM	FLUORIDE	0.090	0.080	0.050	
PPM	CHLORIDE	3.51	3.04	2.59	
PPM	TOT. DISSOLVED SOLIDS	103.0	233.0	111.0	
PPM	NITRATE	<0.7	<0.7	<0.7	
UNITS	pH	6.41	6.02	5.60	
PPM	OIL & GREASE	2.39	<0.1	3.03	

SRP

DOWNSTREAM ≈ 300'

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

PPB UNITS UNLESS NOTED	ANALYSIS	July 14, 1982	Aug 26, 1982	DEC 15, 1982	MAY 13, 1983	Aug 24, 1983	DEC 15, 1983
	CHLOROMETHANE						
	BROMOMETHANE						
	DICHLORODIFLUOROMETHANE						
	VINYL CHLORIDE						
	CHLOROETHANE						
	METHYLENE CHLORIDE	0.44					
	ACETONE						
	TRICHLOROFLUOROMETHANE						
	1,1-DICHLOROETHYLENE	0.82		0.7			
	1,1-DICHLOROETHANE	7.5	2.1	4.5	3.1	6.0	
	t-1,2-DICHLOROETHYLENE	9.4	3.1	8.4	2.7	8.5	
	CHLOROFORM						
	FREON 113		< 5.0	92.2	46.0	22.1	
	1,2-DICHLOROETHANE						
	t-BUTYL METHYL ETHER						
	1,1,1-TRICHLOROETHANE	90.5	27.1	60.4	19.5	42.3	0.7
	CARBON TETRACHLORIDE						
	BROMODICHLOROMETHANE						
	1,2-DICHLOROPROPANE						
	c-1,3-DICHLOROPROPENE						
	t-1,3-DICHLOROPROPENE						
	TCE (TRICHLOROETHYLENE)		15.6	30.0	9.0	17.0	1.0
	1,1,2-TRICHLOROETHANE						
	DIBROMOCHLOROMETHANE						
	BENZENE						
	DIISOPROPYL ETHER						
	2-CHLOROETHYLVINYL ETHER						
	HEXANE						
	BROMOFORM						
	1,1,2,2-TETRACHLOROETHANE						
	PCE (TETRACHLOROETHYLENE)	0.9	0.4	0.5		0.6	
	HEPTANE						
	TOLUNE						
	CHLOROBENZENE						
	ETHYLBENZENE						
	(UNKNOWN PEAKS)		YES	YES	YES	YES	
	TOTAL PPB	109.56	< 56.9	196.7	80.3	96.5	1.7

58Q

DOWNSTREAM $\approx$ 300' –

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

	PPB UNITS UNLESS NOTED	ANALYSIS	APR. 17, 1984	July 17, 1984	Oct 11, 1984	Oct 29, 1984		
1		CHLOROMETHANE						
2		BROMOMETHANE						
3		DICHLORODIFLUOROMETHANE						
4		VINYL CHLORIDE						
5		CHLOROETHANE						
6		METHYLENE CHLORIDE						
7		ACETONE						
8		TRICHLOROFLUOROMETHANE						
9		1,1-DICHLOROETHYLENE		0.9				
10		1,1-DICHLOROETHANE		1.5	8.0	4.0		
11		t-1,2-DICHLOROETHYLENE		2.1	22.0	7.0		
12		CHLOROFORM						
13		FREON 113	3.7					
14		1,2-DICHLOROETHANE		1.6				
15		t-BUTYL METHYL ETHER						
16		1,1,1-TRICHLOROETHANE	1.1	6.5	59.0	33.0		
17		CARBON TETRACHLORIDE						
18		BROMODICHLOROMETHANE						
19		1,2-DICHLOROPROPANE						
20		c-1,3-DICHLOROPROPENE						
21		t-1,3-DICHLOROPROPENE						
22		TCE (TRICHLOROETHYLENE)	1.2	3.6	55.0	11.0		
23		1,1,2-TRICHLOROETHANE						
24		DIBROMOCHLOROMETHANE						
25		BENZENE						
26		DIISOPROPYL ETHER						
27		2-CHLOROETHYLVINYL ETHER						
28		HEXANE						
29		BROMOFORM						
30		1,1,2,2-TETRACHLOROETHANE						
31		PCE (TETRACHLOROETHYLENE)			4.0			
32		HEPTANE						
33		TOLUENE						
34		CHLOROBENZENE						
35		ETHYLBENZENE						
36		(UNKNOWN PEAKS)						
37								
38		TOTAL PPB	6.0	16.2	148.0	55.0		
39								

58R

UNITS	ANALYSIS		Aug 26, 1982	Dec 15, 1982	May 12, 1983	Aug. 24, 1983	Dec 15, 1983
PPM	HEXAVALENT CHROMIUM		<0.01	<0.05	<0.05	<0.05	<0.05
PPM	CHROMIUM		0.0056	0.004	0.006	0.005	0.003
PPM	LEAD		0.0067	0.008	<0.004	0.003	<0.002
PPM	NICKEL		0.011	<0.002	<0.002	0.003	<0.002
PPM	FLUORIDE		0.345	0.42	0.455		0.082
PPM	CHLORIDE		25.1	24.2	25.3	32.5	13.8
PPM	TOT. DISSOLVED SOLIDS		110.0	190.0	150.0	143.0	115.0
PPM	NITRATE		0.075	0.16	0.42	<0.700	<0.7
UNITS	pH		6.97	6.64	7.10	6.77	6.34
PPM	OIL & GREASE		<0.1	0.23	<0.1	<0.1	<0.1

UNITS	ANALYSIS	APR. 17, 1984	July 17, 1984	Oct 11, 1984	Oct 29, 1984
PPM	HEXAVALENT CHROMIUM	<0.05	<0.05	<0.05	
PPM	CHROMIUM	0.003	0.003	0.003	
PPM	LEAD	0.005	<0.004	0.056	0.004
PPM	NICKEL	0.003	<0.002	<0.008	
PPM	FLUORIDE	0.210	0.700	2.80	
PPM	CHLORIDE	13.0	10.5	15.8	
PPM	TOT. DISSOLVED SOLIDS	65.4	206.0	174.0	
PPM	NITRATE	<0.7	2.43	<0.7	
UNITS	pH	6.3	6.50	6.56	
PPM	OIL & GREASE	<0.1	<0.1	1.44	

585

-DOWNSTREAM @ VALLEY ROAD

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

PPB UNITS UNLESS NOTED	ANALYSIS	1	2	3	4 MAY 12, 1983	5 AUG 24, 1983	6 DEC 15, 1983
	CHLOROMETHANE						
	BROMOMETHANE						
	DICHLORODIFLUOROMETHANE						
	VINYL CHLORIDE						
	CHLOROETHANE						
	METHYLENE CHLORIDE						
	ACETONE						
	TRICHLOROFLUOROMETHANE						
	1,1-DICHLOROETHYLENE						
	1,1-DICHLOROETHANE						
	t-1,2-DICHLOROETHYLENE						
	CHLOROFORM						
	FREON 113				6.9		
	1,2-DICHLOROETHANE						
	t-BUTYL METHYL ETHER						
	1,1,1-TRICHLOROETHANE				2.3		
	CARBON TETRACHLORIDE						
	BROMODICHLOROMETHANE						
	1,2-DICHLOROPROPANE						
	c-1,3-DICHLOROPROPENE						
	t-1,3-DICHLOROPROPENE						
	TCE (TRICHLOROETHYLENE)				1.2		
	1,1,2-TRICHLOROETHANE						
	DIBROMOCHLOROMETHANE						
	BENZENE						
	DIISOPROPYL ETHER						
	2-CHLOROETHYLVINYL ETHER						
	HEXANE						
	BROMOFORM						
	1,1,2,2-TETRACHLOROETHANE						
	PCE (TETRACHLOROETHYLENE)						
	HEPTANE						
	TOLUENE						
	CHLOROBENZENE						
	ETHYLBENZENE						
	(UNKNOWN PEAKS)						
	TOTAL PPB				10.4	0.0	0.0

58T

- D[illegible]STREAM @ VALLEY ROAD -

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

	PPB UNITS UNLESS NOTED	ANALYSIS	Apr 17, 1984	July 17, 1984	Oct 11, 1984	Oct 29, 1984		
1		CHLOROMETHANE						
2		BROMOMETHANE						
3		DICHLORODIFLUOROMETHANE						
4		VINYL CHLORIDE						
5		CHLOROETHANE						
6		METHYLENE CHLORIDE						
7		ACETONE				VOL. ORGANICS NOT TESTED ON THIS DATE		
8		TRICHLOROFLUOROMETHANE						
9		1,1-DICHLOROETHYLENE						
10		1,1-DICHLOROETHANE						
11		t-1,2-DICHLOROETHYLENE						
12		CHLOROFORM						
13		FREON 113						
14		1,2-DICHLOROETHANE						
15		t-BUTYL METHYL ETHER						
16		1,1,1-TRICHLOROETHANE						
17		CARBON TETRACHLORIDE						
18		BROMOCHLOROMETHANE						
19		1,2-DICHLOROPROPANE						
20		c-1,3-DICHLOROPROPENE						
21		t-1,3-DICHLOROPROPENE						
22		TCE (TRICHLOROETHYLENE)						
23		1,1,2-TRICHLOROETHANE						
24		DIBROMOCHLOROMETHANE						
25		BENZENE						
26		DIISOPROPYL ETHER						
27		2-CHLOROETHYLVINYL ETHER						
28		HEXANE						
29		BROMOFORM						
30		1,1,2,2-TETRACHLOROETHANE						
31		PCE (TETRACHLOROETHYLENE)						
32		HEPTANE						
33		TOLUENE						
34		CHLOROBENZENE						
35		ETHYLBENZENE						
36		(UNKNOWN PEAKS)						
37								
38		TOTAL PPB	0.0	0.0	0.0	—		
39								

58U

– [illegible]WNSTREAM @ VALLEY ROA[illegible] –

UNITS	ANALYSIS	MAY 12, 1983	AUG. 24, 1983	DEC 15, 1983
PPM	HEXAVALENT CHROMIUM	<0.05	<0.05	– 0.05
PPM	CHROMIUM	0.002	0.003	0.008
PPM	LEAD	<0.004	0.008	0.002
PPM	NICKEL	<0.002	<0.002	<0.002
PPM	FLUORIDE	0.380		0.129
PPM	CHLORIDE	27.8	50.7	14.9
PPM	TOT. DISSOLVED SOLIDS	135.0	219.0	155.0
PPM	NITRATE	0.38	<0.700	<0.7
UNITS	pH	7.96	7.37	6.39
PPM	OIL & GREASE	0.302	<0.1	<0.1

UNITS	ANALYSIS	APR. 17, 1984	JULY 17, 1984	OCT 11, 1984	OCT 29, 1984
PPM	HEXAVALENT CHROMIUM	<0.05	<0.05	<0.05	
PPM	CHROMIUM	0.004	0.004	0.004	
PPM	LEAD	0.004	<0.004	0.011	0.003
PPM	NICKEL	0.005	<0.002	<0.004	
PPM	FLUORIDE	0.140	0.900	0.960	
PPM	CHLORIDE	15.7	18.5	44.6	
PPM	TOT. DISSOLVED SOLIDS	96.6	232.0	235.0	
PPM	NITRATE	1.34	1.07	<0.7	
UNITS	pH	6.40	6.75	6.83	
PPM	OIL & GREASE	<0.1	0.151	0.673	

S8V

- LAGOON WATER -

VOLATILE ORGANIC ANALYSIS BY PURGE/TRAP GAS CHROMATOGRAPHY (GC)

PPB UNITS UNLESS NOTED	ANALYSIS	JULY 14, 1982	AUG 26, 1982	DEC 15, 1982	MAY 12, 1983	AUG 24, 1983	DEC 15, 1983
	CHLOROMETHANE						
	BROMOMETHANE						
	DICHLORODIFLUOROMETHANE						
	VINYL CHLORIDE						
	CHLOROETHANE						
	METHYLENE CHLORIDE		1.7	0.9			29.7
	ACETONE						
	TRICHLOROFLUOROMETHANE						
	1,1-DICHLOROETHYLENE						
	1,1-DICHLOROETHANE			7.4			5.2
	t-1,2-DICHLOROETHYLENE						3.9
	CHLOROFORM						
	FREON 113						
	1,2-DICHLOROETHANE						
	t-BUTYL METHYL ETHER						
	1,1,1-TRICHLOROETHANE	5.2	7.8	21.0	1.1		309.6
	CARBON TETRACHLORIDE						
	BROMODICHLOROMETHANE						
	1,2-DICHLOROPROPANE						
	c-1,3-DICHLOROPROPENE						
	t-1,3-DICHLOROPROPENE						
	TCE (TRICHLOROETHYLENE)	2.5	3.9	8.9			104.6
	1,1,2-TRICHLOROETHANE						
	DIBROMOCHLOROMETHANE						
	BENZENE						
	DIISOPROPYL ETHER						
	2-CHLOROETHYLVINYL ETHER						
	HEXANE						
	BROMOFORM						
	1,1,2,2-TETRACHLOROETHANE						
	PCE (TETRACHLOROETHYLENE)						
	HEPTANE						
	TOLUENE						
	CHLOROBENZENE						
	ETHYLBENZENE						
	(UNKNOWN PEAKS)		YES	YES			YES

S8W

LAGOON WATER — 2013

VOLATILE ORGANIC ANALYSIS BY PURGE & TRAP GAS CHROMATOGRAPHY (GC)

PPB UNITS UNLESS NOTED	ANALYSIS	APR. 17, 1984	July 17, 1984	Oct 11, 1984	Oct 29, 1984
	CHLOROMETHANE				VOL. ORGANICS NOT TESTED ON THIS DATE
	BROMOMETHANE				
	DICHLORODIFLUOROMETHANE				
	VINYL CHLORIDE				
	CHLOROETHANE				
	METHYLENE CHLORIDE				
	ACETONE				
	TRICHLOROFLUOROMETHANE				
	1,1-DICHLOROETHYLENE				
	1,1-DICHLOROETHANE	2.1			
	t-1,2-DICHLOROETHYLENE				
	CHLOROFORM				
	FREON 113	7.6			
	1,2-DICHLOROETHANE				
	t-BUTYL METHYL ETHER				
	1,1,1-TRICHLOROETHANE	18.7			
	CARBON TETRACHLORIDE				
	BROMODICHLOROMETHANE				
	1,2-DICHLOROPROPANE				
	c-1,3-DICHLOROPROPENE				
	t-1,3-DICHLOROPROPENE				
	TCE (TRICHLOROETHYLENE)	9.3			
	1,1,2-TRICHLOROETHANE				
	DIBROMOCHLOROMETHANE				
	BENZENE				
	DIISOPROPYL ETHER				
	2-CHLOROETHYLVINYL ETHER				
	HEXANE				
	BROMOFORM				
	1,1,2,2-TETRACHLOROETHANE				
	PCE (TETRACHLOROETHYLENE)	0.75			
	HEPTANE				
	TOLUENE				
	CHLOROBENZENE				
	ETHYLBENZENE				
	(UNKNOWN PEAKS)				

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– LAGOON WATER –

UNITS	ANALYSIS		AUG. 26, 1982	DEC 15, 1982	MAY 12, 1983	AUG. 24, 1983	DEC 15, 1983
PPM	HEXAVALENT CHROMIUM		0.487	0.11	<0.05	<0.05	<0.05
PPM	CHROMIUM		1.23	1.84	0.096	0.079	0.008
PPM	LEAD		0.057	0.377	0.013	0.276	0.024
PPM	NICKEL		0.005	0.125	0.007	0.038	0.013
PPM	FLUORIDE		0.466	0.40	0.630		0.305
PPM	CHLORIDE		40.7	86.5	56.1	47.2	12.4
PPM	TOT. DISSOLVED SOLIDS		282.0	409.0	221.0	498.0	174.0
PPM	NITRATE		4.3	0.94	0.47	<0.700	<0.7
UNITS	pH		8.05	10.18	9.75	10.2	8.61
PPM	OIL & GREASE		<0.1	<0.1	0.627	<0.1	<0.1

UNITS	ANALYSIS	APR. 17, 1984	JULY 17, 1984	OCT 11, 1984	OCT 29, 1984
PPM	HEXAVALENT CHROMIUM	<0.05	<0.05	<0.05	
PPM	CHROMIUM	0.009	0.004	0.908	
PPM	LEAD	0.011	0.017	2.49	0.200
PPM	NICKEL	0.010	0.006	0.804	
PPM	FLUORIDE	0.600	2.00	2.00	
PPM	CHLORIDE	7.73	5.86	10.1	
PPM	TOT. DISSOLVED SOLIDS	77.9	308.0	954.0	
PPM	NITRATE	<0.7	<0.7	1.50	
UNITS	pH	10.0	9.98	10.65	
PPM	OIL & GREASE	X	4.29	23.6	

[X] Generator

[ ] Transporter

[X] TSD

RCRA Compliance Monitoring Evaluation

DOWTY RFL Industries Inc.
Powerville Road
Boonton, New Jersey

NJ ~~NY~~D002156677

July 2 and September 17, 1985

Participating Personnel:

Environmental Protection Agency

Nick Magriples, Evironmental Engineer
Louis DiGuardia, Geologist
Mike Ferriola, Environmental Scientist
Stacey Gogos, Environmental Engineer
Steve Hale, Environmental Specialist
Bruce Kovak, Environmental Scientist

DOWTY RFL Industries, Inc.

Jack Slater, Facilities Manager

Report Prepared by:

Nick Magriples 11/1/85
Nick Magriples, Environmental Engineer
Source Monitoring Section

Approved for the Director by:

11/1/85
Richard D. Spear, Chief
Surveillance & Monitoring Branch

ATTACHMENT S9A

Report

Purpose of Survey

A RCRA Compliance Monitoring Evaluation was conducted at DOWTY RFL Industries, Boonton, New Jersey on July 2 and September 17, 1985. The scope of the survey included the collection of groundwater monitoring well samples, an evaluation of the facility's compliance with Subpart F requirements and all other applicable Subparts in 40 CFR Part 264.

Facility Description

DOWTY RFL Industries is engaged in the assembly of electronic components for in-line communication devices, such as detection relay devices for utilities. The Boonton facility has gone through a number of operation changes in recent years. Previously, the manufacture of printed circuit boards and the metal finishing of aluminum and steel parts prior to painting, were conducted here. The plating operations, which ended in 1980, were moved to the Newton facility, and by July 1983, the metal finishing operation was converted to a closed loop system. According to the facility manager, as of September 9, 1985 the metal finishing operation was totally eliminated due to the excessive costs of drumming the wastes.

In the early 1970's and up to 1980, when the facility manufactured printed circuit boards, copper and tin/lead were used to plate palladium. The metal to be plated would be cleaned and a layer of 1 mm thick copper deposited on its surface, electrolytically. This was followed by deposition of a layer of .5 mm thick tin/lead, and a stripping and etching step prior to assembly. From 1972 to 1980, 1000 GPD of wastewater from all operations were discharged to an on-site infiltration/percolation lagoon.

The metal finishing operations were conducted on aluminum and raw steel sheets, rods and wire. The aluminum finishing operation consisted of, in sequence; a caustic etch, a dip and spray rinse, a desmutting operation to remove the oxide layer, a rinse, a chromic acid conversion to put chromate on the surface of the metal, and a final rinse and drying prior to being painted in a spray booth. The steel finishing operation consisted of, an alkaline soap cleaning, several dip and spray water rinses, an iron phosphate rinse, and a final rinse and drying prior to being painted as in the aluminum finishing operation. Up till 1983, 100 GPD of wastewater from these operations were discharged to the lagoon. The facility then put in a wastewater treatment/recycle system, which readjusts the pH with either sulfuric acid or caustic soda, thus eliminating the discharge to the lagoon. Every three weeks this closed system had to be purged to remove the accumulated wastes.

Soldering operations are conducted on-site; both hand and flow soldering. The latter consists of a preheated flux being passed over the material in a "wave", followed by a washing step.

Waste Generation

At the time of this inspection, the activities that resulted in the generation of hazardous waste were as follows;

a) Cleaning and removal of the tank bottoms in the closed loop metal finishing operations described previously. Also filter bags containing chromium waste from the process. This usually amounts to one drum per week.
b) Spent flux from the soldering operations. Normally not more than one drum per 90 day period is generated.
c) Ignitron tubes containing mercury. These are gas-discharging rectifier tubes which are used to control the starting of a uni-directional current flow. Normally not more than three or four of these are disposed of every couple of years.

At the time of this inspection the hazardous waste management area contained;

6 drums	Hazardous Waste Liquid	(F006)
1 drum	Waste Solid, Chrome filter bags	(D007)
1 drum	Waste Flammable, Flux	

All had accumulation dates within the month.

When the metal finishing operation is terminated in September, this will eliminate the majority of the wastes being generated.

The facility also has a lagoon on-site (5000 sq. ft.) which was constructed in 1972 and was then rebuilt in August 1975 (See Figure 1). As mentioned previously, this received 3000 GPD from all plating and finishing operations from 1972 till 1980, and 100 GPD from the aluminum and steel operations from July 1980 till July 1983. The waste stream contained several heavy metals (Cd, Cr, Pb), cyanides and several volatile organic compounds from degreasing operations. Treatment of the material in the lagoon consisted of lime addition to adjust the pH, which in turn precipitated the heavy metals. According to company officials there have been no discharges to the lagoon as of July 1983. At the time of this inspection there was a very small amount of rainwater at the bottom of the lagoon, according to the facility manager.

A closure plan for the lagoon was submitted in December 1983 and received approval in January 1985. Currently the facility is taking bids for the removal of any contaminated soil from the lagoon, and final filling and covering.

59c

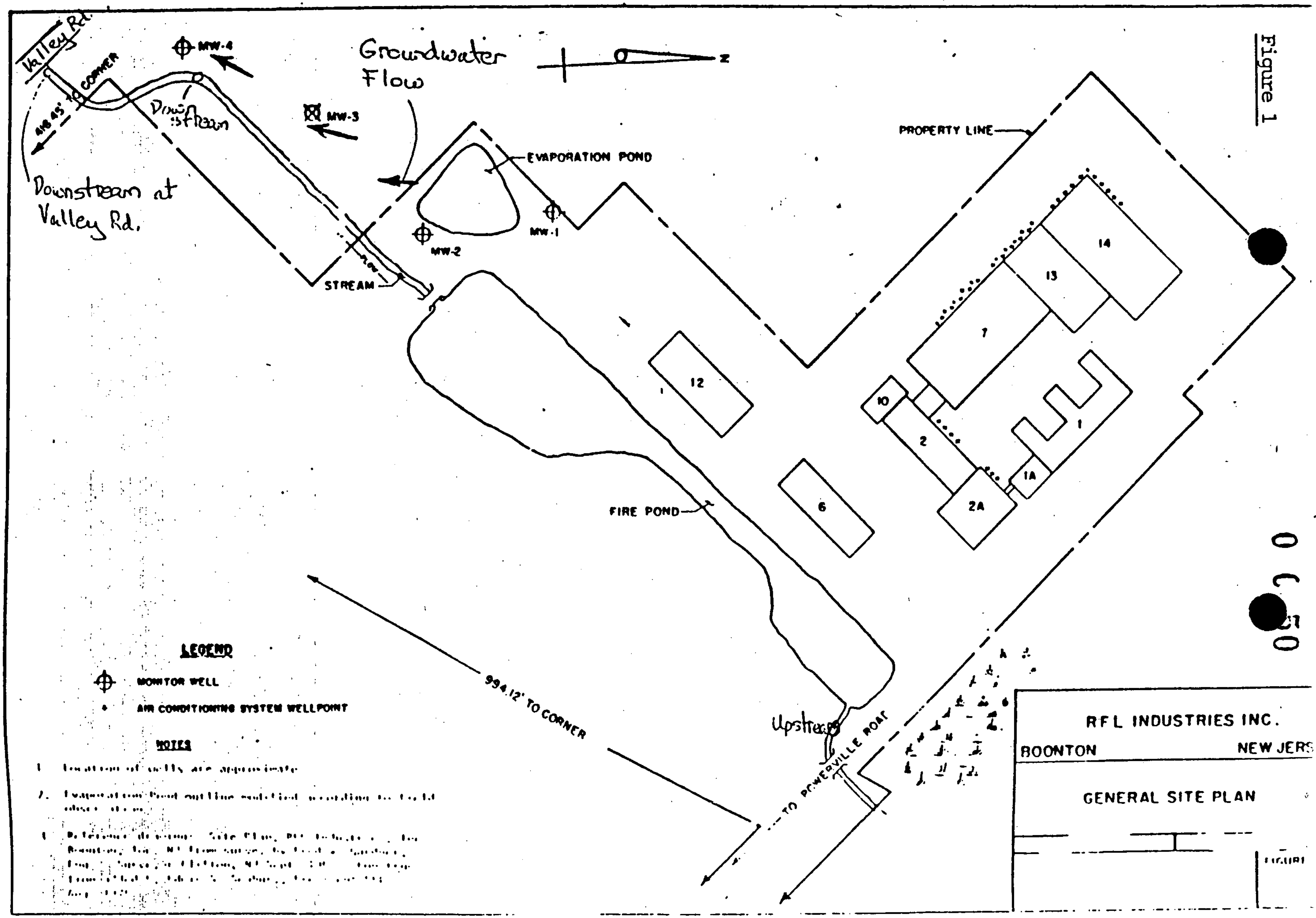
Figure 1
Valley Rd.
418.45' TO CORNER
MW-4
MW-3
Groundwater Flow
N
Down stream
Downstream at Valley Rd.
PROPERTY LINE
EVAPORATION POND
MW-1
MW-2
STREAM
FLOW
14
13
7
12
10
2
1
1A
2A
6
FIRE POND
994.12' TO CORNER
TO POWERVILLE ROAD
Upstream
LEGEND
MONITOR WELL
AIR CONDITIONING SYSTEM WELLPOINT
NOTES
RFL INDUSTRIES INC.
BOONTON
NEW JERS
GENERAL SITE PLAN
FIGURE

Site Hydrogeology

Hydrogeological studies have been conducted at this site by Ground/Water Technology, Inc. of Denville, New Jersey. The hydrogeological setting is characterized by deposits of sand and gravel (Wisconsin stratified drift) that have been deposited in what used to be a topographic low by glacial meltwaters. Boring logs show there is an uneven bedrock surface at a depth of 25 to 45 feet. They also show that the upper 30 feet of soil in the vicinty of the lagoon is made up of a 10 to 20 foot layer of fine to medium sand or silty fine to medium sand, overlying a 10 to 20 foot thick layer of medium to coarse sand.

Water level information was collected by Ground/Water Technology in December 1981 from three on-site wells and the nearby surface water elevations in order to determine groundwater flow conditons in the uppermost aquifer. At that time they determined the flow to be in a south easterly direction; towards the adjacent stream. More recent water level information tends to show that the groundwater flows in a south-southwesterly direction (see Figure 1).

The rate of flow of the groundwater was estimated from the hydraulic gradient and an assumed permeability range of 10^{-4} to 10^{-2} cm/sec. Based on this, the flow rate was estimated to be between 0.005 to 0.5 ft/day.

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Sampling Procedure for Groundwater Monitoring Wells

Samples were collected from RCRA groundwater monitoring wells #1, #2, #3 and #4. Prior to sampling, measurements of the well diameter, well depth, and water level were made to determine the volume of water present in the column (see the Well Monitoring Data Sheets). Each of the four monitoring wells was evacuated by removing 3 volumes of standing water, as called for in EPA well sampling protocol, using a suction lift pump. The hose itself was kept away from the bottom of the well to minimize the amount of sediment disrupted/evacuated. Samples were collected using teflon bailers. Each monitoring well had its own bailer, bailer chord, and pump intake hose dedicated to it.

Samples were collected from each of the four wells for Total Oganic Carbon, Total Organic Halides, pH, Specific Conductivity, Cyanide, Hexavalent Chromium, Metals Scan, Non-Volatile Organics, and Purgeable Organics.

Analytical Results

The data obtained from samples collected at RFL Industries is presented in Table 1. Tables 2 thru 5 show a comparison of EPA's analytical results with RFL Industries' data. Due to the facility being in an assessment program, a statistical analysis is not required, although according to a letter from NJDEP, monitoring of the indicator parmeters is required. Concerning metals analysis comparison, EPA samples were taken as total metals, whereas RFL Industries' samples were filtered prior to analysis; thus the significant difference. All measurements of total metals were below drinking water standards, which are based on total metals. Arsenic and lead levels in Well #2 were close to the .05 ppm mandatory limit. According to NJDEP personnel, the State requires only dissolved metals analysis, since total metals measures the amount in solution as well as the amount tied up in the sediment, which they believe is inappropriate. Although total metals shows the overall impact on the groundwater by the facility. Monitoring wells #2 and #4 both showed high sediment content in the groundwater after proper well evacuation, whereas well #'s 1 and 3 were relatively clear. Wells #2 and #4 also showed an overall higher level of metals as compared to #'s 1 and 3, which showed no significant metals except for some zinc. This may be an indication that the wells were improperly developed when they were installed or that wells #2 and #4 are monitoring a different geological setting.

The organics analysis showed no indication of any significant increase over up-gradient conditions. The value 403 ug/l of methylene chloride in Well #4 can not be realistically used because of the corresponding TOX value of 24 ug/l in the same well; although EPA lab personnel state that the TOX method is more difficult to duplicate.

S9F

Findings and Conclusions

Based upon a sampling inspection and review of the facility's documents and records, RFL Industries is not in compliance with the following RCRA requirements:

1) N.J. Reg.# 7:26-9.4(b)2 and 7:14A-6.4(a) require that the facility maintain on-site a written waste analysis plan and a groundwater sampling and analysis plan. Neither were available during the inspection.

2) N.J. Reg.# 7:26-9.4(g)5i thru iv require that there be written documentation of the job title for each position at the facility related to hazardous waste management and the name of the employee filling each job, a written job description of each position related to hazardous waste management, a written description of the type and amount of training to be received and the amount of training actually received. The only person to receive any training was the facilities manager, but there was no documentation of it. All other persons who handle hazardous waste are trained by him. There are no job titles or descriptions as related to hazardous waste management.

3) The facility is currently under a Groundwater Quality Assessment Plan due to a rapid increase in the concentration of organic compounds in monitoring wells #2 and #3 in May of 1981. Not until August of 1983, after all discharges to the lagoon had ceased was a fourth well installed, approximately 350 feet southwest of the lagoon (175 feet southwest of well #3). This was chosen over the recommendation from both Ground/Water Technology (2/82) and Ertec Atlantic, Inc. (8/82) for a fourth well west of the lagoon to determine the extent of thhe plume migration.

N.J. Reg.# 7:14A-6.3 requires at least three monitoring wells installed hydraulically at the limit of the waste management area. Their number, location and depth must ensure that they immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to groundwater. This was required by November 1981. The down-gradient wells at RFL Industries were inadequate since there were only two down-gradient wells till 1983, and well #3 was >100 feet away from the lagoon and could not immediately detect any contamination of the groundwater.

Note: Samples were also taken and are still currently being taken from upstream, downstream and downstream at Valley Road points (see Figure 1). The past several samplings show no indication of contamination.

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4) The NJDEP requires that samples for metals be filtered prior to analysis. If a comparison to metals limits in the permit, which are based on drinking water standards, are to be made, it is recommended that replicate samples be taken. One should be filtered prior to analyzing for dissolved metals and the other one should be analyzed for total metals.

S9H

Table 1

Results of Analysis on Groundwater Monitoring Well Samples
Collected at RFL Industries

Parameter	#087576 MW #1 (up-grad)	#087577 MW #2 (down-grad)	#087579 MW #3 (down-grad)	#087578 MW #4 (down-grad)	#087580 field blank
pH (SU)	6.21	6.62	5.79	6.36	-
Specific Conductance (um/cm @ 25°C)	65	224	67	57	-
TOC (mg/l)	3.16	43.64	7.21	11.88	-
TOX (ug/l)	13 J	26	17	24	-
Cyanide (mg/l)	.03	.02 K	.02 K	.02 K	-
Hexavalent Chromium (ug/l)	7 K	7 K	7 K	7 K	-
Total Metals(ug/l)					
Silver	2 K	2 K	2 K	2 K	-
Arsenic	2 K	40	2 K	2 K	-
Beryllium	4 J	46	3 J	5.5	-
Cadmium	6 J	3 K	3 K	3 K	-
Chromium	10 K	20 J	10 K	20 J	-
Copper	30 J	72	20 J	62	-
Mercury	.2 K	.4 J	.4 J	.2 K	-
Lead	40 J	46	40 J	40 J	-
Nickel	20 K	110	20 K	20 K	-
Antimony	1 K	1 K	1 K	1 K	-
Selenium	1 K	2 J	1 J	1 K	-
Thallium	.4 K	.4 K	.4 K	.4 K	-
Zinc	290	160	160	420	-
Organics(ug/l)					
Methylene Chloride	32	29	13	403	U
Tetrachloroethylene	U	2	U	U	U
1,1,1 Trichloroethane	U	2.7	U	U	U
Trichloroethylene	U	13	3.2	2	U
Toluene	U	U	U	4.5	U

K: Actual value known to be less than the value given
J: Estimated value
U: Material analyzed for, but not detected

S9I —

Table 2

Comparison of EPA's Analytical Results with RFL Industries' Data
for Monitoring Well #1 (up-gradient)

Parameter	EPA 7/2/85	RFL 1/24/85	RFL 4/12/85	RFL 7/22/85
pH (SU)	6.21	5.98	6.69	6.58
Specific Conductance (um/cm @ 25°C)	65	80	80	90
TOC (mg/l)	3.16	0.3 K	0.60	0.3 K
TOX (ug/l)	13 J	30	30	20
Cyanide (mg/l)	.03	.001 K	NA	.002 K
Hexavalent Chromium (ug/l) †	7 K	50 K	10 K	10 K
Metals(ug/l) †				
Silver	2 K	3	NA	2 K
Arsenic	2 K	10	NA	5 K
Beryllium	4 J	NA	NA	NA
Cadmium	6 J	1 K	NA	1
Chromium	10 K	NA	NA	1
Copper	30 J	3 K	NA	3 K
Mercury	.2 K	0.5 K	NA	0.5 K
Lead	40 J	4 K	37	4 K
Nickel	20 K	NA	NA	NA
Antimony	1 K	NA	NA	NA
Selenium	1 K	NA	NA	NA
Thallium	.4 K	NA	NA	NA
Zinc	290	395	NA	18
Organics(ug/l)				
Methylene Chloride	32	3	2 K	1 K
Tetrachloroethylene	U	3	2 K	1 K
1,1,1 Trichloroethane	U	3	2 K	1 K
Trichloroethylene	U	3	2 K	1 K
Toluene	U	3	2 K	1 K

† EPA analysis indicates Total Metals, whereas RFL Industries' analysis is for Dissolved Metals.

NA Not analyzed

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Table 3

Comparison of EPA's Analytical Results with RFL Industries' Data for Monitoring Well #2 (down-gradient)

Parameter	EPA 7/2/85	RFL 1/24/85	RFL 4/12/85	RFL 7/22/85
pH (SU)	6.62	6.11	6.70	6.95
Specific Conductance (um/cm @ 25°C)	224	150	200	200
TOC (mg/l)	43.64	.4	1.3	1.35
TOX (ug/l)	26	10	10	10
Cyanide (mg/l)	.02 K	.001 K	NA	.002 K
Hexavalent Chromium (ug/l) †	7 K	50 K	10 K	10 K
<u>Metals(ug/l)</u> †				
Silver	2 K	2 K	NA	2 K
Arsenic	40	20	NA	5 K
Beryllium	46	NA	NA	NA
Cadmium	3 K	2 K	NA	1 K
Chromium	20 J	NA	NA	1 K
Copper	72	3 K	NA	3
Mercury	.4 J	0.5 K	NA	0.5 K
Lead	46	4 K	4 K	4 K
Nickel	110	NA	NA	NA
Antimony	1 K	NA	NA	NA
Selenium	2 J	NA	NA	NA
Thallium	.4 K	NA	NA	NA
Zinc	160	423	NA	16
<u>Organics(ug/l)</u>				
Methylene Chloride	29	3	2 K	1 K
Tetrachloroethylene	2	1	2 K	1 K
1,1,1 Trichloroethane	2.7	9	5	1 K
Trichloroethylene	13	20	7	1 K
Toluene	U	3	2 K	1 K

† EPA analysis indicates Total Metals, whereas RFL Industries' analysis is for Dissolved Metals.

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Table 4

Comparison of EPA's Analytical Results with RFL Industries' Data for Monitoring Well #3 (down-gradient)

Parameter	EPA 7/2/85	RFL 1/24/85	RFL 4/12/85	RFL 7/22/85
pH (SU)	5.79	5.11	5.89	6.08
Specific Conductance (um/cm @ 25°C)	67	45	55	510
TOC (mg/l)	7.21	0.3 K	2.1	2.1
TOX (ug/l)	17	10.0 K	10 K	20
Cyanide (mg/l)	.02 K	.001 K	NA	.002 K
Hexavalent Chromium (ug/l)	7 K	50 K	10 K	10 K
Metals(ug/l) †				
Silver	2 K	2 K	NA	2 K
Arsenic	2 K	10 K	NA	5 K
Beryllium	3 J	NA	NA	NA
Cadmium	3 K	2 K	NA	1 K
Chromium	10 K	NA	NA	1 K
Copper	20 J	3 K	NA	2
Mercury	.4 J	0.5 K	NA	3 K
Lead	40 J	4 K	4 K	0.5 K
Nickel	20 K	NA	NA	4 K
Antimony	1 K	NA	NA	NA
Selenium	1 J	NA	NA	NA
Thallium	.4 K	NA	NA	NA
Zinc	160	83	NA	11
Organics(ug/l)				
Methylene Chloride	13	3	2 K	1 K
Tetrachloroethylene	U	3	2 K	1 K
1,1,1 Trichloroethane	U	3	2 K	1 K
Trichloroethylene	3.2	3	2 K	8
Toluene	U	3	2 K	1 K

† EPA analysis indicates Total Metals, whereas RFL Industries' analysis is for Dissolved Metals.

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Table 5

Comparison of EPA's Analytical Results with RFL Industries' Data for Monitoring Well #4 (down-gradient)

Parameter	EPA 7/2/85	RFL 1/24/85	RFL 4/12/85	RFL 7/22/85
pH (SU)	6.36	5.83	6.18	6.33
Specific Conductance (um/cm @ 25°C)	57	38	60	700
TOC (mg/l)	11.88	4.5	4.3	9.6
TOX (ug/l)	24	30	50	10
Cyanide (mg/l)	.02 K	.001 K	NA	.002 K
Hexavalent Chromium (ug/l)	7 K	50 K	10 K	10 K
<u>Metals(ug/l)</u> †				
Silver	2 K	2 K	NA	2 K
Arsenic	2 K	20	NA	5 K
Beryllium	5.5	NA	NA	NA
Cadmium	3 K	2 K	NA	1 K
Chromium	20 J	NA	NA	4
Copper	62	30	NA	49
Mercury	.2 K	0.5 K	NA	0.5 K
Lead	40 J	12	17	37
Nickel	20 K	NA	NA	NA
Antimony	1 K	NA	NA	NA
Selenium	1 K	NA	NA	NA
Thallium	.4 K	NA	NA	NA
Zinc	420	370	NA	37
<u>Organics(ug/l)</u>				
Methylene Chloride	403	3	2 K	1 K
Tetrachloroethylene	U	3	2 K	1 K
1,1,1 Trichloroethane	U	3	2 K	1 K
Trichloroethylene	2	3	2 K	1 K
Toluene	4.5	3	2 K	1 K

† EPA analysis indicates Total Metals, whereas RFL Industries' analysis is for Dissolved Metals.

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EVALUATION AND SITE INSPECTION OF
RFL INDUSTRIES, INC.
BOONTON, NEW JERSEY

Prepared for:

U.S. Environmental Protection Agency
Region II
New York, New York

EPA Contract Number 68-01-6515

Work Assignment R02-002

Prepared by:

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15 Campus Drive, Suite 100
Somerset, New Jersey 08873

August, 1982

ATTACHMENT I

1.0 INTRODUCTION

This report presents the results of a technical review of the alternate ground-water monitoring plan of RFL Industries, Boonton, New Jersey. The purpose of this review is to assess the effectiveness of the ground-water monitoring program and to determine the facility's compliance with the requirements of Subpart F (40 CFR 265.90-265.94) of the Resource Conservation and Recovery Act (RCRA).

Information used in preparing this review includes technical documents submitted by the New Jersey Department of Environmental Protection (NJDEP), consultant's geohydrological reports, laboratory sample analysis reports, well and boring logs, and local topographic maps. Data collected during an earlier site inspection of the facility by Ertec in August, 1982 were also incorporated into the review.

The hazardous waste facility at Boonton consists of a 100 sq. ft. surface impoundment. The impoundment has been receiving approximately 100 gallons per day of waste water from existing metal finishing operations. Preceding December 1980, approximately 3000 gallons per day of waste water was discharged to the containment lagoon. This was due to the previous manufacture of printed circuit boards.

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2.0 SUMMARY OF REVIEW COMMENTS

2.1 REGULATORY DEFICIENCIES

The monitoring system, sampling and analysis plan, and data accumulated by RFL Industries have been reviewed by Ertec for compliance with 40 CFR 265.90-265.94. The deficiencies in the alternate ground-water monitoring program, established at the site, are summarized below:

- 265.93(d)(7) Presently, samples are collected on a monthly basis in accordance with a N.J.D.E.P. order. Prior to this, monthly sampling program, ground-water samples were not taken on a quarterly basis. After completion of the present program, quarterly analysis should be initiated unless it is deemed by the N.J.D.E.P. that more frequent sampling and analysis is necessary.

- Failure to develop a ground-water quality assessment program, as outlined in 265.93(d)(4).

2.2 TECHNICAL DEFICIENCIES

- A potentiometric map should be constructed for the facility. This map should include more representative data points, besides the three monitoring wells.

- A fourth monitoring well located downgradient and to the west of the lagoon, as suggested by Ground/Water Technology, should be given strong consideration, especially if the results of the alternate ground-water monitoring program show ground-water contamination and migration.

T3

3.0 WORK ASSIGNMENT REVIEW

As submitted to Ertec by EPA Region II, Work Assignment R02-002 included an evaluation of RFL Industries for compliance with the regulatory requirements promulgated in 40 CFR, Subpart F, 265.90-265.94.

3.1 COMPLIANCE WITH 40 CFR 265.90-265.94

The primary regulatory requirements under 40 CFR 265.90-265.94 call for establishment of a ground-water monitoring system (265.91), the development of a sampling and analysis plan (265.92) and proper record-keeping and reporting procedures (265.94).

The nature of the regulations which involve the ground-water monitoring system and the sampling and analysis plan allow professional judgment wherever possible. The regulations require general tasks that imply that more specific work be completed in order to satisfy those regulations. Those implied requirements are somewhat subjective but, in the opinion of Ertec, imply a minimum requirement. Some of the comments included as "non-compliance" comments are relative to implied requirements but may as easily be included under Section 5.0, Additional Comments and Technical Recommendations.

3.1.1 Ground-Water Monitoring System

An alternate ground-water monitoring system has been established at RFL Industries in accordance with 265.90(d). It was developed in agreement among the parties involved: RFL Industries, the consulting firm of Ground/Water Technology, Inc. and the New Jersey Department of Environmental Protection (NJDEP).

The implementation and development of this program was the result of a preliminary hydrogeological investigation undertaken by Ground/

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Water Technology in February, 1982. Their study revealed the presence of an abnormally rapid increase in the concentration of organic compounds in monitor well-3, in May of 1981. Monitor well-1 (the upgradient well) had been found to only exceed the drinking-water suitability limit for lead and was well within the limits for all organic compounds. Monitor well-2 has also been found to exceed the limits for various organic compounds.

There are three monitoring wells at the facility (See Figure 1). Monitoring wells 2 and 3 are designated as downgradient wells with the third well (MW-1) serving as the upgradient well. The wells were constructed in June of 1980 by the Morethrench American Well Company of Rockaway, New Jersey. Pumping tests performed during well completion defined well yields between 20 and 38 gpm within the upper zone.

The wells were installed using a rotary drilling rig. The depths are as follows: MW-1 at 29 feet, MW-2 at 26 feet and MW-3 at 30 feet. Each well is constructed of 2-inch diameter PVC casing. The screen is constructed of 20-slot PVC. The length of the screens are 20 feet. The screen is emplaced on the bottom of MW-1, but in MW-2 and 3 the screen is located above 4 feet and 3 feet, respectively, of additional casing. The borehole diameter is 6" for all three wells.

During the well installation, 1/2 bag of Revert was used for each well. The annular spaces in each well were sealed with one bag of bentonite and a box of bentonite pellets to form a slurry. The gravel pack surrounding the screen is composed of #3 Morie filter gravel.

The wells extend above the ground elevation, resulting in a stick-up of between 2 and 2-1/2 feet.

The lithology and depth for all three wells are presented in Table 1. One well was terminated due to bedrock at approximately 26 feet

TS

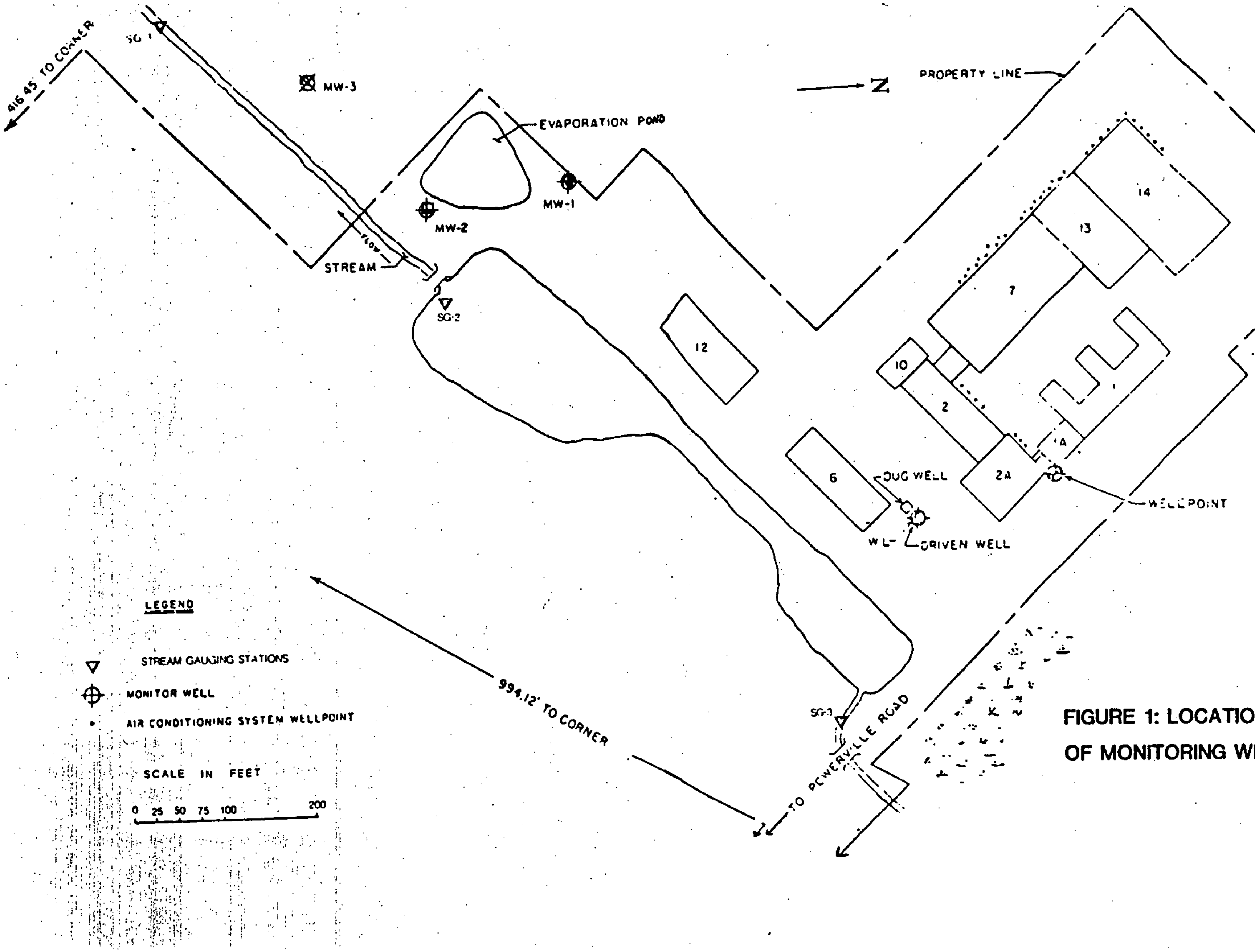

FIGURE 1: LOCATION OF MONITORING WELLS

TABLE 1

BORING LOGS

MONITORING WELL #1

DEPTH	FORMATION
0 - 5'	Coarse sand and med. sand
5'- 14'	Fine to med. sand angular, some silt
14'- 20'	Same as above
20'- 30'	Coarse to very coarse. Small percent of fine to med. sand

MONITORING WELL #2

0 - 10'	Cobbles, gray fine to med. sand, cobbles near surface
10'- 25'	Med to coarse tan sand. Very coarse sand at 25', some pea gravel 1-5 mm.
26'	Rock - sloping to east

MONITORING WELL #3

0'- 15'	Silty sand (Sand fine to med.)
15'- 20'	Sand silt
20'- 30'	Sand (coarse to very coarse)
	Clean just a small percent of silt

Based on logs made by Moretrench American Corporation, 1980.

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deep. The uneven bedrock surface varies from approximately 25 to 45 feet beneath the surface.

The soil on the site is predominately Wisconsin stratified drift, a glacial deposit composed of layers of sand and gravel, sands and silty sand. The monitor well boring logs indicate that the upper 30 feet of soil in the vicinity of the evaporation pond, is generally composed of a 10 to 20 foot layer of fine to medium sand or silty, fine to medium sand, overlying a 10 to 20 foot thick layer of medium to coarse sand.

3.1.2 Sampling and Analysis Plan

Ground-water sampling and analysis for the facility has been carried out by Industrial Corrosion Management Incorporated, Randolph, New Jersey. The firm is a state certified drinking water/waste-water analysis lab.

The plan calls for samples to be collected once a month for a period of three months. The sampling stations include the three monitoring wells, the upstream (SG-3) and downstream (SG-1) surface water gaging stations, the discharge pipe into the infiltration lagoon (SG-2), and the infiltration lagoon's liquids. The samples from the infiltration lagoon are taken as close to the lagoon bottom as possible, in order to obtain a representative sample.

The sampling procedure provides for ground-water level measurements to be taken prior to the sample procurement. These elevations are obtained monthly from the three on-site monitoring wells as well as surface water level elevations from the following three stations: upstream station at the facility's access road to Powerville Road, at the outlet of the fire pond, and the downstream station approximately 200 feet downstream of monitoring well-3. All stations were surveyed by a New Jersey licensed land surveyor to the same datum as the monitor wells.

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The sampling techniques used in the plan have been approved by the N.J.D.E.P. Samples are collected using a stainless steel grabber. Special self-sealing glass vials are used for containing volatile-organic-analysis samples. For metal analysis, standard polyethylene bottles are used. The glass sample bottles are rinsed with the sample water before being filled. After rinsing, the sample bottle is filled with the sample using a minimum of agitation. One-inch airspace is left at the top to enable the chemist to adequately mix the sample before analyzing it.

In order to avoid cross-contamination, all sampling materials are triple rinsed. They are first washed with methanol, then rinsed with distilled water. The methanol is allowed to volatize before resuming sampling. All samples are kept cool after collection by packing them in ice chests.

A sampling and analysis plan has been developed and implemented. Completion is expected in late August. The parameters analyzed for are listed in Table 2. The first two monthly results of these parameters are listed in Tables 3 and 4. The volatile organics are listed only if their concentration is greater than one part per billion.

3.1.3 Record Keeping and Reporting

The monthly analysis is submitted to the N.J.D.E.P. for review. Presently, data from June and July have been submitted. The final analysis is tentatively scheduled for the third week of August. Within thirty days of the end of the testing period, the facility will submit to the N.J.D.E.P. a written report summarizing the sampling investigation and recommendations for future analysis.

3.2 GROUND-WATER MONITORING DEFICIENCIES

Review of the available information has found deficiencies in ground-water monitoring which reflect non-compliance with the applicable regulatory requirements.

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TABLE 2

GROUND-WATER ANALYSIS PARAMETERS

VOLATILE ORGANICS	INORGANIC COMPOUNDS
Xylene	Chromium Total
Ethyl Benzene	Chromium Hexavalent
Tetrachloroethylene	Lead
Toluene	Nickel
1, 1, 2, 2-Tetrachloroethane	Fluoride
Benzene	Chloride
Trichloroethylene	Total Dissolved Solids
Carbon Tetrachloride	Oil and Grease
1, 1, 1-Trichloroethane	Nitrates
1, 1-Dichloroethylene	pH
1, 2-Dichloroethane	
Chloroform	
1, 2-Dichloroethylene	
1, 1-Dichloroethane	
Trichlorofluoromethane	
Methylene Chloride	

T/0

TABLE 3

CONTAMINANT CONCENTRATION OF GROUND-WATER
SAMPLES TAKEN MAY 23, 1982

ANALYTICAL TEST	Well-1 Monitor RESULT	Well-2 Monitor	Well-3 Monitor	Upstream	Discharge Lagoon	Bottom Lagoon	Downstream
Total Chromium (as Cr)	0.07	0.01	0.004	.005	.35	.60	.004
Lead	0.09	0.06	0.005	.01	.02	.49	.01
Nickel	0.005	0.01	0.005	.002	.01	.05	.003
Fluoride	0.022	0.26	0.36	.28	.29	.57	.51
Chloride	6.8	37	12	20	52	53	33
Total Dissolved Solids	29.6	90	38.4	72.4	389	456	132
Oil & Grease	LT 0.1	5.5	LT 0.1	LT 0.1	0.3	LT 0.1	LT 0.1
Nitrate (as N)	0.70	0.83	2.50	.14	2.50	.56	.30
Hexavalent Chromium(As Cr)	Lt 0.1	LT 0.1	LT 0.01	LT 0.01	0.045	.035	LT 0.1
pH (units)	6.5	6.8	8.7	7.1	8.0	8.7	7.0
Methylene Chloride		3.8			9.1	1.2	
1, 1-Dichloroethylene		1.7					
1, 1-Dichloroethane		19.8	14.2		2.7		
t-1, 2-Dichloroethylene		0.8					
1, 1, 1-Trichloroethane		284.7	.8		73.4		
TCE (Trichloroethylene)		2.8	2.1		22.6		
Chloroform			.95		1.0	0.8	
Acetone					651.5		
Toluene					2.6		
Freon 113		LT50			LT 1.0	LT 1.0	LT 8.0

All results reported as mg/l (ppm) unless otherwise stated.

LT = less than

T12

TABLE 4

CONTAMINANT CONCENTRATIONS OF GROUND-WATER SAMPLES TAKEN JULY 14, 1982

ANALYTICAL TEST	RESULTS Well-1 Monitor	Well-2 Monitor	Well-3 Monitor	Upstream	Discharge Lagoon	Bottom Lagoon	Downstream
Total Chromium (as Cr)	0.005	.007	.003	.005	.763	.114	.004
Lead	0.011	.009	.018	.014	.085	.056	.042
Nickel	LT 0.001	LT .001	.003	LT .001	.009	.015	.005
Fluoride	LT 0.01	.25	.43	.12	.44	.58	.47
Chloride	5.0	.30	5.0	16	73.5	55	28
Total Dissolved Solids	93.8	151	75	90	332	329	159
Oil & Grease	LT 0.1	LT 0.1	0.1	LT0.1	0.1	LT 0.1	LT 0.1
Nitrate (as N)	0.332	.316	1.51	LT .013	3.54	.253	LT .013
Hexavalent Chromium(as Cr)	LT 0.001	LT .001	LT .001	.002	.01	.05	.002
pH (units)	6.68	6.68	5.92	7.20	7.26	10.03	6.92
Methylene Chloride		45.0			19.7		0.44
1, 1-Dichloroethylene		3.7			2.2		0.82
1, 1-Dichloroethane	69.6	40.9	133.5		1.3		7.5
t-1, 2-Dichloroethylene		1.5					9.4
1, 1, 1-Trichloroethane		401.6			39.3	5.2	90.5
TCE (Trichloroethylene)		11.9	5.65		23.8		
Dibromochloromethane		2.2			2.6	2.5	
PCE(Tetrachloroethylene)		0.7			1.0		0.9
Heptane					1.8		
Freon 113		LT50					LT10

All results reported as mg/l (ppm) unless otherwise stated.

LT = less than

3.2.1 Ground-Water Monitoring Deficiencies

The ground-water monitoring system presently includes three monitoring wells, one upgradient and two downgradient.

- Well placement and location seem to be providing accurate data of ground-water contamination. A map of the ground-water elevations taken during facility visit is presented in Figure 2. Ground-water flow is toward the southwest, with the flow of the stream. A potentiometric map constructed of data acquired over the monitoring period, is essential for completing a competent evaluation of the monitoring system.

A proposed fourth monitoring well, located downgradient and to the west of the lagoon, as suggested by Ground/Water Technology, should be given strong consideration, especially if the results of the alternate ground-water monitoring program show ground-water contamination and migration.

3.2.2 Sampling and Analysis Plan

- 265.93(d)(7) Presently, samples are collected on a monthly basis in accordance with a N.J.D.E.P. order. Prior to this monthly sampling program, ground-water samples were not taken on a quarterly basis. After completion of the present program, quarterly analysis should be initiated unless it is deemed by the N.J.D.E.P. that more frequent sampling and analysis is necessary.

3.2.3 Record Keeping and Reporting

The facility is in compliance with the record keeping and reporting procedures as promulgated in 265.94(b).

T13

T14

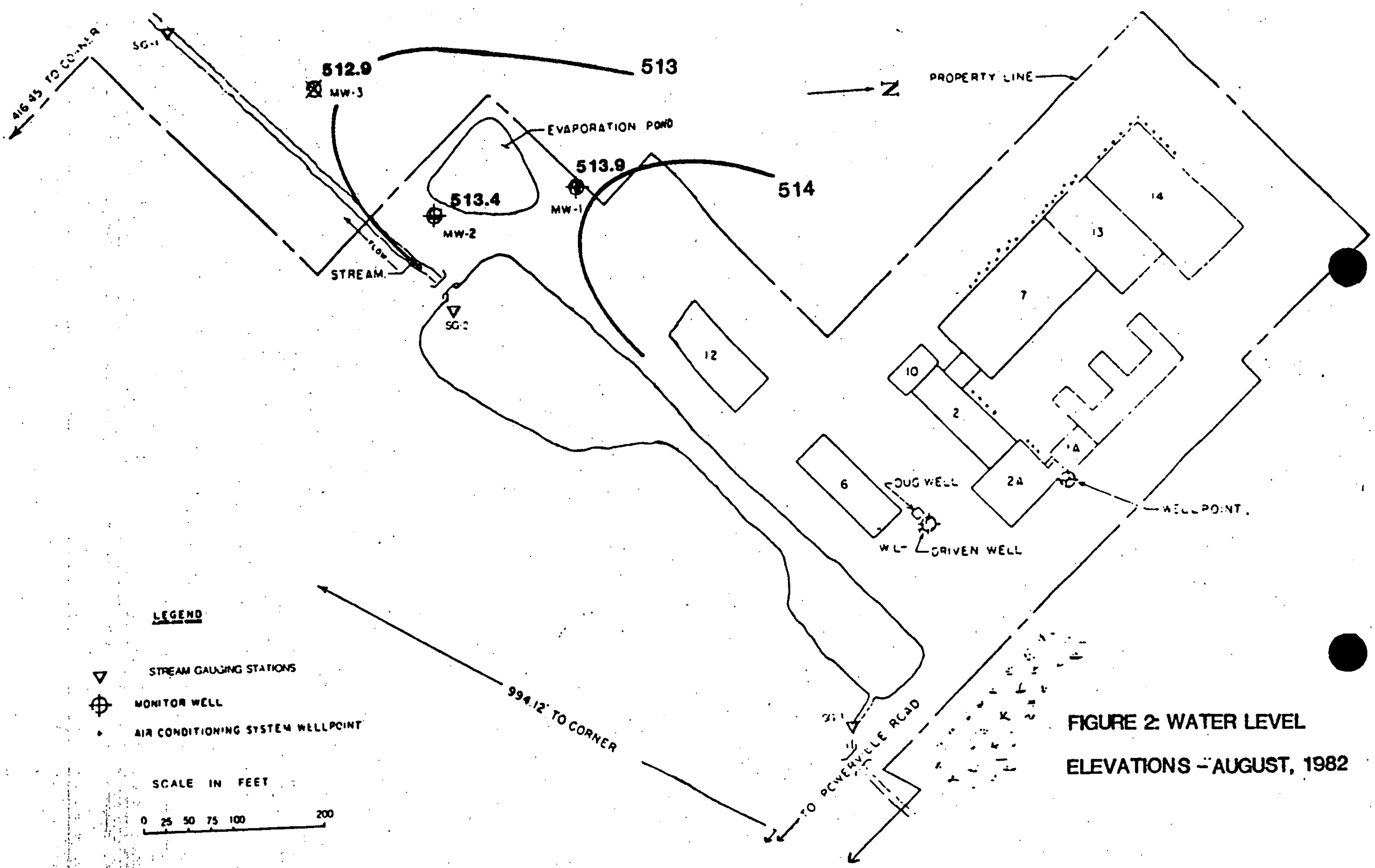

FIGURE 2: WATER LEVEL ELEVATIONS - AUGUST, 1982

4.0 TECHNICAL REVIEW

Inspection of RFL Industries, Inc. has found the facility to be in non-compliance with the RCRA regulations outlined in 40 CFR, Subpart F, for an alternate ground-water monitoring system (265.90(d)). Non-compliance is the result of inadequacy in the ground-water monitoring system and to the frequency of sampling and non-assertive action following the first detection of the contaminants in May of 1981.

The alternate ground-water monitoring plan presently employed, comes almost a year after the first detection of the contaminants. A consulting firm was hired to work with the N.J.D.E.P. to help assess the contamination problem at the facility. The result is the presently operating ground-water monitoring system.

Static water level elevations, measured at various time intervals at the facility (Table 5(a)) indicate a local ground-water flow direction toward the southwest. In the report by Ground/Water Technology, Inc. it is stated that the ground-water levels of the monitor wells is indicative of ground-water flow beneath the evaporation pond and into the adjacent stream. The report establishes a flow direction from the lagoon directly into the stream. In view of this, the location of monitor well-3 is probably outside the flow path from the lagoon to the stream. Water-level elevations taken August 4 at the facility (Table 5(b)) confirm the southwesterly ground-water flow direction. Without an accurate potentiometric map of the area, monitor well-3 can not really be discounted, in terms of any contaminant migration.

The facility does affect the ground-water, but on a very small scale. It's been reported that the wellpoint near building 1A, located about 700 feet away from the lagoon, pumps constantly and any water from this wellpoint that is not needed is directed to the dug well where it recharges the ground water. Data is not available on the pumping rates and recharge. The air conditioning wellpoints along Buildings 2, 7, 13 and 14 are used only in the summer months, although they appear to have little effect on ground-water levels.

T15

TABLE 5 (a)

PREVIOUS WATER LEVEL MEASUREMENTS OF GROUND-WATER MONITORING WELLS AT FACILITY

	July 22, 1982	May 28, 1982	December 29, 1981
Monitor Well-1	512.16	512.06	511.61
Monitor Well-2	511.05	511.03	510.52
Monitor Well-3	510.77	510.73	510.73

TABLE 5 (b)

DEPTH AND WATER LEVEL MEASUREMENTS OF GROUND-WATER MONITORING WELLS, AUGUST 4, 1982

	Total Depth	Total Depth When Drilled	Top of Casing	Depth To Water	Water Level Elevation	
Monitor Well-1	30.2'	29'	522.01'	8.1'	513.91'	Upgradient
Monitor Well-2	24.6'	26'	518.91'	5.5'	513.41'	Downgradient
Monitor Well-3	29.4'	30'	517.71'	4.8'	412.91'	Downgradient

T16

Ground-water hydraulic studies were not completed at the site; although, the flow rate has been estimated by Ground/Water Technology, Inc. Using the hydraulic gradient and an assumed permeability range of 10^{-4} to 10^{-2} cm/sec. for the soils (as described in the area of the evaporation pond), a flow rate, in the range of 0.005 to 0.5 feet per day has been estimated.

A study completed in 1966 by the American Dewatering Corporation revealed the facility to be situated in the extreme upstream end of a restricted underground basin which drains south into the Rockaway River. Pumping tests done in April of that year yielded 100,000 gallons of water at a rate of 24 gpm in a span of 110 hours. This led the firm to the conclusion that the aquifer shape is too complex for conventional analysis. The conclusions which were achieved are as follows:

1) Time-drawdown data showed a consistently increasing slope, indicating the presence of barrier boundaries to the north and west of the plant coinciding with topographic boundaries.

2) The recovery of water level in the upper coarse sand was very slow after pumping stopped, indicating a lack of underground recharge.

3) Good vertical transmissibility of the shallow sands was observed near building 2A.

The study also focused on the major dewatering of the aquifer by the facility. This would result in an increased underground recharge, by attracting flow from minor tributaries to the basin. The dewatering would also cause a reverse flow, returning water which had already flowed beneath the facility toward the Rockaway River. There has been no major dewatering of the aquifer in recent years.

T17

Until further testing has been completed, characterizing the aquifer and determining the rate and extent of contamination, it is difficult to determine if any immediate problem exists.

From review of the water-level elevation data, we can see some fluctuation due mostly to seasonal storms and runoff. Figure 2 illustrates the ground-water flow using the data obtained at the facility visit. Figure 3 shows the ground-water flow as suggested by measurements made by Ground/Water Technology, Inc. in December, 1981. Both figures show similar patterns, in terms of ground-water flow. Monitor well-1 is clearly upgradient from the other two monitoring wells and should yield samples representative of background conditions. This is the main reason why the contaminants in this well are almost negligible. Monitor well-2 shows some evidence of contamination, especially the presence of volatile organics. These are evidently emanating from the lagoon. Monitor well-3 also shows signs of contamination, generally less than monitoring well-2, except for 1, 1-Dichloroethane, chloroform, flouride and chloride. This well is located about 150 feet away from the lagoon, possibly too far to detect the same level of contaminants found in monitor well-2 due to dilution.

The general effectiveness of the monitoring wells appears to be acceptable. They are all screened in the upper portion of the water-bearing zone, thereby yielding representative ground-water samples. Since monitoring well-2 is located about 25 feet away from the lagoon, vertical migration of contaminants is expected to be minimal within the zone between the lagoon and the well.

Evidence from the well logs indicates the presence of sands and silts in the water-bearing zone. No low permeability layers are found underlying the facility; therefore, water movement through the sediments may conduct contaminants to other water-bearing horizons. The stratified drift overlying the glacial aquifer contains small amounts of clay; therefore, the possibility of contaminant adsorption and attenuation by the geologic materials is low.

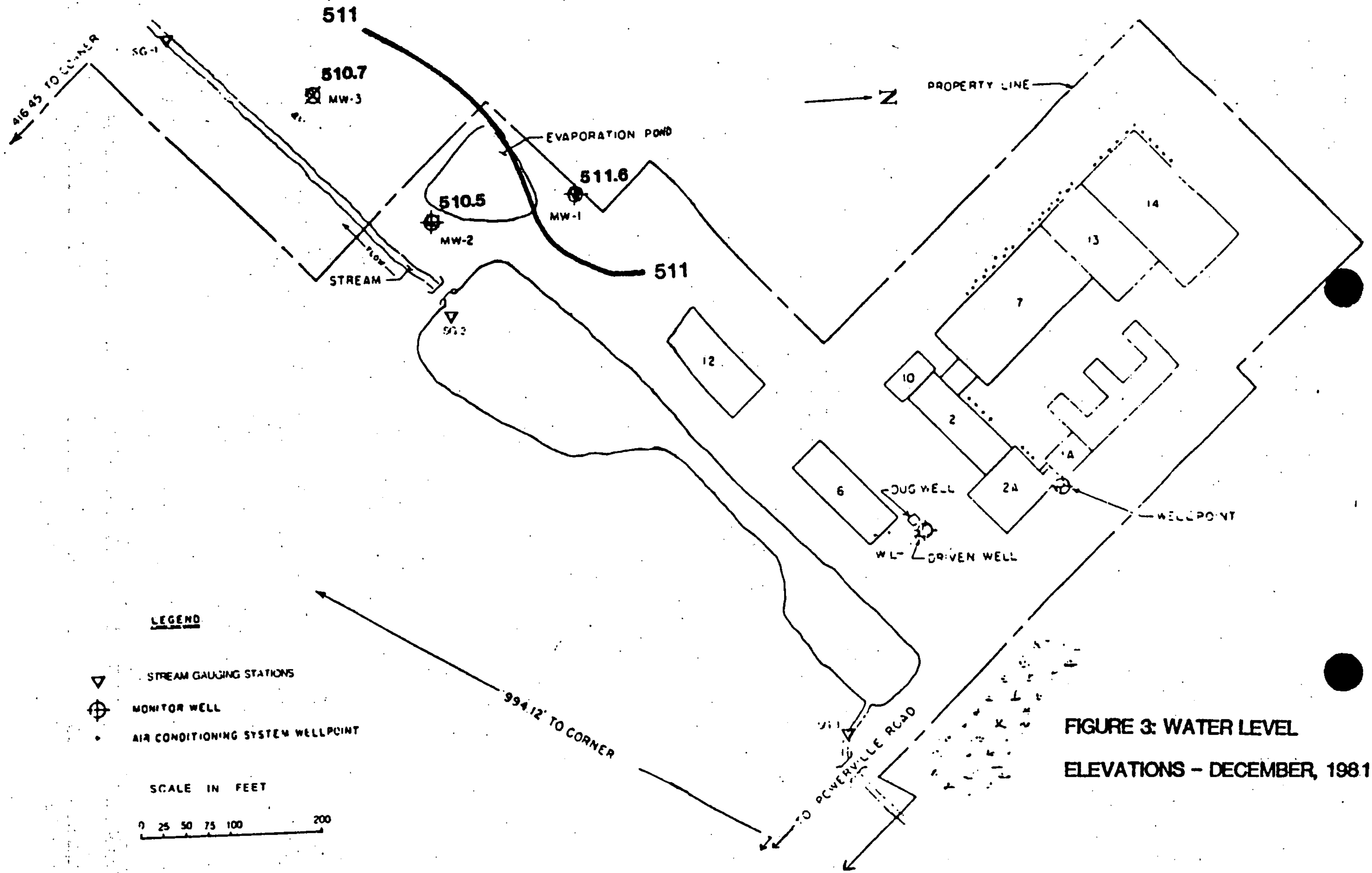

FIGURE 3: WATER LEVEL ELEVATIONS – DECEMBER, 1981

5.0 ADDITIONAL COMMENTS AND TECHNICAL RECOMMENDATIONS

- A potentiometric map should be constructed for the facility. This map should include more representative data points, besides the three monitoring wells.

- Ground-water flow trends to the southwest. A monitoring well should be constructed near the western perimeter of the lagoon in order to effectively detect ground-water contamination originating from the nearby lagoon.

- A ground-water quality assessment program should be implemented as outlined in 265.93(d)(4) as soon as possible.

- The effect of pumping on ground-water flow should also be assessed.

T 20

PARAMETER	LIMITATION	WELLS #1	#2	#3	#4
Ammonia Nitrogen	0.5 ppm	0.05	0.010	0.140	0.11
Arsenic and Compounds	0.05 ppm	ND	ND	ND	ND
Barium	ND	ND	ND	ND	ND
Cadmium	0.01 ppm	0.001	0.001	ND	ND
Choride	250 ppm	2	26	ND	ND
Chromium (Hex) and Compounds	0.05 ppm	ND	ND	ND	ND
Copper	1.0 ppm	0.015	0.018	0.008	0.011
Cyanide	0.2 ppm	ND	ND	ND	ND
Fluoride	2.0 ppm	0.18	0.48	0.57	0.37
Iron	0.3 ppm	0.455*	.341*	.275	.420*
Lead and Compounds	0.05 ppm	0.008	0.008	0.006	ND
Mercury and Compounds	0.002 ppm	0.0002	0.0002	0.0002	0.0003
Nitrate Nitrogen (NO_3-N)	10 ppm	0.94	0.58	0.19	.32
pH	5-9 su	not tested by NJDEP	not tested by NJDEP	Not tested by NJDEP	Not tested by NJDEP
Phenols	0.3 ppm	ND	ND	ND	ND
Phosphate, Total	—— ppm	1.13 as PO_4	3.80as PO_4	0.60as PO_4	3.94as PO_4
Silver and Compounds	0.05 ppm	ND	ND	ND	ND
Sodium	50 ppm	1.9	12.3	5.0	3.5
Specific Conductance	µmho/cm	63.2	174.4	43.4	48.7
Total Dissolved Solids	500 ppm	53	157	41	52
Total Organic Carbon	—— ppm	Not tested by NJDEP	Not Tested by NJDEP	Not Tested By NJDEP	Not Tested by NJDEP
Total Volatile Organics	50 ppb	ND	46.9	1.3	ND
Zinc and Compounds	5 ppm	0.048	0.048	0.021	0.023

ND - not detected

T21

Form DEP-009
1/81

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
TRENTON, NEW JERSEY 08625

CHAIN OF CUSTODY RECORD

NAME OF UNIT AND ADDRESS:
N.J. D.E.P. Division of Water Resources
25 Arctic Parkway, Trenton
ERCOM Unit

SP-4-86
Dowty - RFL
Boonton Twp. Morris County

SAMPLE NUMBER	Number of Containers	DESCRIPTION OF SAMPLES
41053	6 4 vials	Metals, Gen. Chemical, Nutrients, Phenols, cyanide, + Spec. Cond. V.O. Scan
41054	6 4 vials	Metals, Gen. Chemical, Nutrients, Phenols, cyanide, + Spec. Cond. V.O. Scan
41055	6 4 vials	Metals, Gen. Chemical, Nutrients, Phenols, cyanide, + Spec. Cond. V.O. Scan
41056	6 4 vials	Metals, Gen. Chemical, Nutrients, Phenols, cyanide, + Spec. Cond. V.O. Scan
43134	2 vials	V.O. Control Blanks

PERSON ASSUMING RESPONSIBILITY FOR SAMPLE:	TIME	DATE
Tony Altieri 208		4/23/86

SAMPLE NUMBER	RELINQUISHED BY:	RECEIVED BY:	TIME	DATE	REASON FOR CHANGE OF CUSTODY
All Above					

T22

CHAIN OF CUSTO

Form VST-001
7/81

STATE OF NEW JERSEY
Department of Environmental Protection
Water Analysis

PLEASE TYPE OR PRINT WITH BALLPOINT PEN SP-4-86

MUNICIPALITY Boonton Twp.	COUNTY Morris	STREAM —
FACILITY Dowty-RFL	LOCATION Powerville Rd	
REPRESENTATIVE	TITLE	COLL NAME Tony Altieri
REMARKS 222-24D		

BACT. LAB NO. ______
DATE REC'D. ______
BOTTLE NO. 41053
DATE REC'D. ______
STORET ENT. ______ READ ______

Station Identification Number	YR. MO. DAY	HOUR	Sample No.
S C ,	860123	,	(1) P 8 ,

FIELD ANALYSIS

- ☐ Water Temp. °C. (2) P00010,
- ☐ D.O. - Winkler (3) P00300,
- ☐ D.O. - Probe (4) P00299,
- ☐ pH (Field) (5) P00400,
- ☐ Sample Depth-ft. (6) P00003,
- ☐ Stream Flow-CFS (7) P00061,
- ☐ Gage Height-ft. (8) P00065,
- ☐ Spec. Cond. @ 25°C (9) P00095,
- ☐ Salinity °/oo (10) P00480,
- ☐ Tide Stage (11) P70211,

CONDITION CODES

- ☐ Weather Conditions (12) P00041,
- ☐ Flow Severity (13) P01351,
- ☐ ______ Severity (14) P013__,
- ☐ ______ Severity (15) P013__,

NUTRIENTS

LEVEL ☐ HIGH ☐ LOW

- ☑ NO_2 - N (16) P00615,
- ☑ $NO_2 + NO_3$ - N (17) P00630,
- ☑ NH_3 - N (18) P00610,
- ☐ Tot. Kjeldahl N (19) P00625,

Ortho - PO_4 as P ☑ (20) P70507, PO_4 ☐ (21) P00660,

Phosphorus - tot as P ☑ (22) P00665, PO_4 ☐ (23) P00650,

BACTERIOLOGICAL — DILUTIONS (REQUESTED)

Fecal Coliform / Total Coliform	10	1	10^-1	10^-2	10^-3	10^-4	10^-5	10^-6
Fecal Streptococci	10	1	10^-1	10^-2	10^-3	10^-4	10^-5	10^-6

Fecal coli #100 ml ☐ MPN (24) P31615, ☐ MF (25) P31613,

☐ Fecal Strept MPN/100ml (26) P31677,

☐ Tot coli MPN/100 ml (27) P31505,

BIOCHEMICAL OXYGEN DEMAND

INITIAL D.O. (lab.) ______ SAMPLE

SEED YES ☐ NO ☐

CONC. %

BOD __

☐ BOD 5-DAY (28) P310, 6-DAY (29) P312,

☐ COD (30) P340,

☐ TOC (31) P00680,

- ☐ Color Pt - Cou (32) P00080,
- ☐ Turbidity (33) P00076,
- ☐ Suspended Solids (34) P00530,
- ☐ Suspended Solids Ash (35) P00540,
- ☐ Tot. Solids (36) P00500,
- ☐ Tot. Solids - Ash (37) P00510,
- ☑ Tot. Dissolved Solids (TDS) (38) P70300,

- ☐ pH (LAB) (39) P00403,
- ☐ Alkalinity as $CaCO_3$ (40) P00410,
- ☐ Min. Acidity as $CaCO_3$ (41) P00436,
- ☑ Chloride (42) P00940,
- ☐ MBAS (43) P38260,
- ☑ Phenols (44) P32730,
- ☐ Hardness - tot as $CaCO_3$ (45) P00900,
- ☑ Sulfate (46) P00945,
- ☐ Oil & Grease (47) P00556,
- ☐ Petroleum Hydrocarbons (48) P45501,
- ☑ Cyanide (49) P00720,

- ☑ As - tot ug/l (50) P01002,
- ☑ Cd - tot ug/l (51) P01027,
- ☐ Cr - tot ug/l (52) P01034,
- ☑ Cu - tot ug/l (53) P01042,
- ☑ Fe - tot ug/l (54) P01045,
- ☑ Hg - tot ug/l (55) P71900,
- ☐ Mn - tot ug/l (56) P01055,
- ☐ Ni - tot ug/l (57) P01067,
- ☑ Pb - tot ug/l (58) P01051,
- ☑ Zn - tot ug/l (59) P01092,

ADDITIONAL ANALYSIS

- ☑ Barium P______
- ☑ Silver P______
- ☑ Sodium P______
- ☑ Fluoride P______
- ☑ Chrom, Hex.

RESULTS mg/l unless otherwise noted

Chemist Review ______

T23

Part 1 (White) - Water Quality Inventory Copy
Part 2 (Canary) - Laboratory Copy
Part 3 (Pink) - Laboratory Copy
Part 4 (Goldenrod) - Field Samplers Copy

Form VST-010
8/79

CHAIN OF CUST...

STATE OF NEW JERSEY
Department of Environmental Protection
Division of Water Resources
WATER ANALYSIS

PLEASE TYPE OR PRINT WITH BALLPOINT PEN SP-4-86

MUNICIPALITY Boonton Twp.	COUNTY Morris	STREAM —
FACILITY Dowty-RFL	LOCATION Powerville Rd	
REPRESENTATIVE	TITLE	COLL NAME Tony Altieri
REMARKS		222-24D

BACT. LAB NO.
DATE REC'D.
BOTTLE NO. 41053
DATE REC'D.
STORET ENT. READ

STATION IDENTIFICATION NUMBER: S C .
YR. MO. DAY: 86 01 23
HOUR:

FIELD ANALYSIS

☐ Water Temp °C	P10,	
☐ D.O.-Winkler	P300,	
☐ D.O.-Probe	P299,	
☐ pH (Field)	P400,	
☐ Sample Depth-ft.	P3,	
☐ Gage Height-ft.	P65,	
☐ Spec. Cond. @ 25 °C	P95,	
☐ Salinity 0/00	P480,	
☐ Tide Stage	P70211,	

BACTERIOLOGICAL - DILUTIONS (REQUESTED)

Fecal Coliform / Total Coliform	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}
Fecal Streptococci	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

Fecal coli /100 ml ☐ MPN P31615, ☐ MF P31613,

☐ Fecal Strept MPN /100 ml P31677,

☐ Tot coli MPN /100 ml P31505,

BIOCHEMICAL OXYGEN DEMAND

INITIAL D.O. (lab.) ______ SAMPLE

SEED YES ☐ NO ☐

CONC.%

BOD

☐ BOD ☐ 5-DAY P310, ☐ 6-DAY P312,

ANALYSIS	UNITS	PARAMETER	VALUE	RMKS.
☐		P		
☑ Spec. Cond.		P		
☐		P		
☑ V.O. Scan		P		
☐		P		
☐		P		
☐		P		
☐		P		
☐		P		
☐		P		
☐		P		
☐		P		
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☐		P		
☐		P		
☐		P		
☐		P		

CHAIN OF CUSTODY

DATE	TIME	FROM (NAME)	TO (NAME)
		V.O. Control Blanks # C-43134	

Chemist Review T24

Part 1 - Water Quality Inventory Copy
Part 2 - Chemistry Copy
Part 3 - Water Resources Copy (For Transmissi...
Part 4 - Bacteriology Copy

CHAIN OF CUSTO[illegible]

Form VST-001
7/81

STATE OF NEW JERSEY
Department of Environmental Protection
Water Analysis

PLEASE TYPE OR PRINT WITH BALLPOINT PEN SP-4-86

MUNICIPALITY Boonton Twp.	COUNTY Morris	STREAM —
FACILITY DowTy-RFL	LOCATION Powerville Rd.	
REPRESENTATIVE	TITLE	NAME Tony ALTIERI
REMARKS		222-24D

BACT. LAB NO.	
DATE REC'D.	
BOTTLE NO.	41054
DATE REC'D	
STORET	ENT. / READ

Station Identification Number	YR. MO. DAY	HOUR	Sample No.
S C ,	860123		(1) P 8 ,

FIELD ANALYSIS

- ☐ Water Temp. °C. (2) P00010,
- ☐ D.O. - Winkler (3) P00300,
- ☐ D.O. - Probe (4) P00299,
- ☐ pH (Field) (5) P00400,
- ☐ Sample Depth-ft. (6) P00003,
- ☐ Stream Flow-CFS (7) P00061,
- ☐ Gage Height-ft. (8) P00065,
- ☐ Spec. Cond. @ 25 °C (9) P00095,
- ☐ Salinity °/oo (10) P00480,
- ☐ Tide Stage (11) P70211,

CONDITION CODES

- ☐ Weather Conditions (12) P00041,
- ☐ Flow Severity (13) P01351,
- ☐ ______ Severity (14) P013__,
- ☐ ______ Severity (15) P013__,

NUTRIENTS

LEVEL ☐ HIGH ☐ LOW

- ☑ NO_2 - N (16) P00615,
- ☑ $NO_2 + NO_3$ - N (17) P00630,
- ☑ NH_3 - N (18) P00610,
- ☐ Tot. Kjeldahl N (19) P00625,

Ortho - PO_4 as P ☑ (20) P70507, PO_4 ☐ (21) P00660,

Phosphorus - tot as P ☑ (22) P00665, PO_4 ☐ (23) P00650,

BACTERIOLOGICAL – DILUTIONS (REQUESTED)

Fecal Coliform / Total Coliform	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}
Fecal Streptococci	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

- Fecal coli #100 ml ☐ MPN (24) P31615, ☐ MF (25) P31613,
- ☐ Fecal Strept MPN/100ml (26) P31677,
- ☐ Tot coli MPN/100 ml (27) P31505,

BIOCHEMICAL OXYGEN DEMAND

INITIAL D.O. (lab.) ______ SAMPLE

SEED YES ☐ NO ☐

CONC. %

BOD __

- ☐ BOD 5-DAY (28) P310, 6-DAY (29) P312,
- ☐ COD (30) P340,
- ☐ TOC (31) P00680,
- ☐ Color Pt - Cou (32) P00080,
- ☐ Turbidity (33) P00076,
- ☐ Suspended Solids (34) P00530,
- ☐ Suspended Solids Ash (35) P00540,
- ☐ Tot. Solids (36) P00500,
- ☐ Tot. Solids - Ash (37) P00510,
- ☑ Tot. Dissolved Solids (TDS) (38) P70300,

- ☐ pH (LAB) (39) P00403,
- ☐ Alkalinity as $CaCO_3$ (40) P00410,
- ☐ Min. Acidity as $CaCO_3$ (41) P00436,
- ☑ Chloride (42) P00940,
- ☐ MBAS (43) P38260,
- ☑ Phenols (44) P32730,
- ☐ Hardness - tot as $CaCO_3$ (45) P00900,
- ☑ Sulfate (46) P00945,
- ☐ Oil & Grease (47) P00556,
- ☐ Petroleum Hydrocarbons (48) F45501,
- ☑ Cyanide (49) P00720,
- ☑ As - tot ug/l (50) P01002,
- ☑ Cd - tot ug/l (51) P01027,
- ☐ Cr - tot ug/l (52) P01034,
- ☑ Cu - tot ug/l (53) P01042,
- ☑ Fe - tot ug/l (54) P01045,
- ☑ Hg - tot ug/l (55) P71900,
- ☐ Mn - tot ug/l (56) P01055,
- ☐ Ni - tot ug/l (57) P01067,
- ☑ Pb - tot ug/l (58) P01051,
- ☑ Zn - tot ug/l (59) P01092,

ADDITIONAL ANALYSIS

- ☑ BARIUM P
- ☑ SILVER P
- ☑ SODIUM P
- ☑ FLUORIDE P
- ☑ CHROM HEX P

RESULTS mg/l unless otherwise noted

Chemist Review ______

T25

Part 1 (White) - Water Quality Inventory Copy
Part 2 (Canary) - Laboratory Copy
Part 3 (Pink) - Laboratory Copy
Part 4 (Goldenrod) - Field Samplers Copy

CHAIN OF CUSTO.

Form VST-010
8/79

PLEASE TYPE OR PRINT WITH BALLPOINT PEN SP-4-86

STATE OF NEW JERSEY
Department of Environmental Protection
Division of Water Resources
WATER ANALYSIS

BACT. LAB NO.
DATE REC'D.
BOTTLE NO. 41054
DATE REC'D.
STORET ENT. READ

MUNICIPALITY Boonton Twp. COUNTY Morris STREAM —
FACILITY Dowty-RFL LOCATION Powerville Rd.
REPRESENTATIVE TITLE COLL NAME Tony Altieri
REMARKS 222-24D

STATION IDENTIFICATION NUMBER	YR. MO. DAY	HOUR
SC.	860123	

FIELD ANALYSIS

☐ Water Temp °C	P10,	
☐ D.O.-Winkler	P300,	
☐ D.O.-Probe	P299,	
☐ pH (Field)	P400,	
☐ Sample Depth-ft.	P3,	
☐ Gage Height-ft.	P65,	
☐ Spec. Cond. @ 25°C	P95,	
☐ Salinity °/oo	P480,	
☐ Tide Stage	P70211,	

BACTERIOLOGICAL - DILUTIONS (REQUESTED)

Fecal Coliform Total Coliform	10	1	-1 10	-2 10	-3 10	-4 10	-5 10	-6 10
Fecal Streptococci	10	1	-1 10	-2 10	-3 10	-4 10	-5 10	-6 10

Fecal coli /100 ml ☐ MPN P31615, ☐ MF P31613,

☐ Fecal Strept MPN /100 ml P31677,

☐ Tot coli MPN /100 ml P31505,

BIOCHEMICAL OXYGEN DEMAND

INITIAL D.O. (lab.) ______ SAMPLE

SEED YES ☐ NO ☐

CONC.%

BOD

☐ BOD ☐ 5-DAY P310, ☐ 6-DAY P312,

ANALYSIS	UNITS	PARAMETER	VALUE	RMKS.
☐		P		
☑ Spec. Cond.		P		
☐		P		
☑ V.O. Scan		P		

CHAIN OF CUSTODY

DATE	TIME	FROM (NAME)	TO (NAME)
	V.O. Control Blanks #C-43134		

Chemist Review TJG

Part 1 - Water Quality Inventory Copy
Part 2 - Chemistry Copy
Part 3 - Water Resources Copy (For Transmissio
Part 4 - Bacteriology Copy

CHAIN OF CUST

Form VST-001
7/81

STATE OF NEW JERSEY
Department of Environmental Protection
Water Analysis

PLEASE TYPE OR PRINT WITH BALLPOINT PEN SP-4-86

MUNICIPALITY Boonton Twp.	COUNTY Morris	STREAM —
FACILITY Dowty-RFL	LOCATION Powerville Rd.	
REPRESENTATIVE	TITLE	COLL NAME Tony Altieri
REMARKS		
		222-24D

BACT. LAB NO. ______
DATE REC'D. ______
BOTTLE NO. 41055
DATE REC'D. ______
STORET ENT. ______ READ ______

Station Identification Number	YR. MO. DAY	HOUR	Sample No.
S C ,	8 6 0 1 2 3	.	(1) P 8 ,

FIELD ANALYSIS

- ☐ Water Temp. °C. (2) P00010,
- ☐ D.O. - Winkler (3) P00300,
- ☐ D.O. - Probe (4) P00299,
- ☐ pH (Field) (5) P00400,
- ☐ Sample Depth-ft. (6) P00003,
- ☐ Stream Flow-CFS (7) P00061,
- ☐ Gage Height-ft. (8) P00065,
- ☐ Spec. Cond. @ 25 °C (9) P00095,
- ☐ Salinity °/00 (10) P00480,
- ☐ Tide Stage (11) P70211,

CONDITION CODES

- ☐ Weather Conditions (12) P00041,
- ☐ Flow Severity (13) P01351,
- ☐ ______ Severity (14) P013__,
- ☐ ______ Severity (15) P013__,

NUTRIENTS

LEVEL ☐ HIGH ☐ LOW

- ☑ NO_2 - N (16) P00615,
- ☑ $NO_2 + NO_3$ - N (17) P00630,
- ☑ NH_3 - N (18) P00610,
- ☐ Tot. Kjeldahl N (19) P00625,

Ortho - PO_4 as P ☑ (20) P70507, as PO_4 ☐ (21) P00660,

Phosphorus - tot as P ☑ (22) P00665, as PO_4 ☐ (23) P00650,

BACTERIOLOGICAL — DILUTIONS (REQUESTED)

Fecal Coliform / Total Coliform	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}
Fecal Streptococci	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

- Fecal coli #/100 ml ☐ MPN (24) P31615, ☐ MF (25) P31613,
- ☐ Fecal Strept MPN/100ml (26) P31677,
- ☐ Tot coli MPN/100 ml (27) P31505,

BIOCHEMICAL OXYGEN DEMAND

INITIAL D.O. (lab.) ______ SAMPLE

SEED YES ☐ NO ☐

CONC. %

BOD ___

- ☐ BOD 5-DAY (28) P310, 6-DAY (29) P312,
- ☐ COD (30) P340,
- ☐ TOC (31) P00680,
- ☐ Color Pt - Cou (32) P00080,
- ☐ Turbidity (33) P00076,
- ☐ Suspended Solids (34) P00530,
- ☐ Suspended Solids Ash (35) P00540,
- ☐ Tot. Solids (36) P00500,
- ☐ Tot. Solids - Ash (37) P00510,
- ☑ Tot. Dissolved Solids (TDS) (38) P70300,

- ☐ pH (LAB) (39) P00403,
- ☐ Alkalinity as $CaCO_3$ (40) P00410,
- ☐ Min. Acidity as $CaCO_3$ (41) P00436,
- ☑ Chloride (42) P00940,
- ☐ MBAS (43) P38260,
- ☑ Phenols (44) P32730,
- ☐ Hardness - tot as $CaCO_3$ (45) P00900,
- ☑ Sulfate (46) P00945,
- ☐ Oil & Grease (47) P00556,
- ☐ Petroleum Hydrocarbons (48) P45501,
- ☑ Cyanide (49) P00720,

- ☑ As - tot ug/l (50) P01002,
- ☑ Cd - tot ug/l (51) P01027,
- ☐ Cr - tot ug/l (52) P01034,
- ☑ Cu - tot ug/l (53) P01042,
- ☑ Fe - tot ug/l (54) P01045,
- ☑ Hg - tot ug/l (55) P71900,
- ☐ Mn - tot ug/l (56) P01055,
- ☐ Ni - tot ug/l (57) P01067,
- ☑ Pb - tot ug/l (58) P01051,
- ☑ Zn - tot ug/l (59) P01092,

ADDITIONAL ANALYSIS

- ☑ Barium P -
- ☑ Silver P
- ☑ Sodium P
- ☑ Fluoride
- ☑ Chem. Hex.

RESULTS mg/l unless otherwise noted

Chemist Review ______

T27

Part 1 (White) - Water Quality Inventory Copy
Part 2 (Canary) - Laboratory Copy
Part 3 (Pink) - Laboratory Copy
Part 4 (Goldenrod) - Field Samplers Copy

CHAIN OF CUSTODY

Form VST-010
8/79

PLEASE TYPE OR PRINT WITH BALLPOINT PEN

SP-4-86

STATE OF NEW JERSEY
Department of Environmental Protection
Division of Water Resources
WATER ANALYSIS

MUNICIPALITY Boonton Twp. COUNTY Morris STREAM —
FACILITY DOWTY-RFL LOCATION Powerville Rd.
REPRESENTATIVE TITLE
REMARKS Tony Altieri 222-24D

BACT. LAB NO.
DATE REC'D.
BOTTLE NO. 41055
DATE REC'D.
STORET ENT. READ

STATION IDENTIFICATION NUMBER: S C .
YR. MO. DAY: 860123
HOUR

FIELD ANALYSIS

☐ Water Temp °C	P10,	
☐ D.O.-Winkler	P300,	
☐ D.O.-Probe	P299,	
☐ pH (Field)	P400,	
☐ Sample Depth-ft.	P3,	
☐ Gage Height-ft.	P65,	
☐ Spec. Cond. @ 25°C	P95,	
☐ Salinity 0/00	P480,	
☐ Tide Stage	P70211,	

BACTERIOLOGICAL - DILUTIONS (REQUESTED)

Fecal Coliform / Total Coliform	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}
Fecal Streptococci	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

Fecal coli /100 ml ☐ MPN P31615, ☐ MF P31613,

☐ Fecal Strept MPN/100 ml P31677,

☐ Tot coli MPN/100 ml P31505,

BIOCHEMICAL OXYGEN DEMAND

INITIAL D.O. (lab.) ______ SAMPLE

SEED YES ☐ NO ☐

CONC.%

BOD

☐ BOD ☐ 5-DAY P310, ☐ 6-DAY P312,

ANALYSIS	UNITS	PARAMETER	VALUE	RMKS.
☐		P		
☑ Spec. Cond.		P		
☐		P		
☑ V.O. Scan		P		
☐		P		

CHAIN OF CUSTODY

DATE	TIME	FROM (NAME)	TO (NAME)
		V.O. Control Blanks #C-43134	

Chemist Review T28

Part 1 - Water Quality Inventory Copy
Part 2 - Chemistry Copy
Part 3 - Water Resources Copy (For Transmission)
Part 4 - Bacteriology Copy

CHAIN OF CUSTO

Form VST-001
7/81

STATE OF NEW JERSEY
Department of Environmental Protection
Water Analysis

PLEASE TYPE OR PRINT WITH BALLPOINT PEN SP-4-86

BACT. LAB NO.	
DATE REC'D.	
BOTTLE NO.	41056
DATE REC'D.	
STORET	ENT. / READ

MUNICIPALITY Boonton Twp.	COUNTY Morris	STREAM —
FACILITY Dowty - RFL	LOCATION Powerville Rd.	
REPRESENTATIVE	TITLE	COLL NAME Tony Altieri
REMARKS		222-24D

Station Identification Number	YR. MO. DAY	HOUR	Sample No.
SC,	860123		(1) P8,

FIELD ANALYSIS

- ☐ Water Temp. °C. (2) P00010,
- ☐ D.O. - Winkler (3) P00300,
- ☐ D.O. - Probe (4) P00299,
- ☐ pH (Field) (5) P00400,
- ☐ Sample Depth-ft. (6) P00003,
- ☐ Stream Flow-CFS (7) P00061,
- ☐ Gage Height-ft. (8) P00065,
- ☐ Spec. Cond. @ 25 °C (9) P00095,
- ☐ Salinity 0/00 (10) P00480,
- ☐ Tide Stage (11) P70211,

CONDITION CODES

- ☐ Weather Conditions (12) P00041,
- ☐ Flow Severity (13) P01351,
- ☐ ________ Severity (14) P013__,
- ☐ ________ Severity (15) P013__,

NUTRIENTS

LEVEL ☐ HIGH ☐ LOW

- ☑ NO_2 - N (16) P00615,
- ☑ $NO_2 + NO_3$ - N (17) P00630,
- ☑ NH_3 - N (18) P00610,
- ☐ Tot. Kjeldahl N (19) P00625,

Ortho - PO_4 as P ☑ (20) P70507, PO_4 ☐ (21) P00660,

Phosphorus tot as P ☑ (22) P00665, PO_4 ☐ (23) P00650,

BACTERIOLOGICAL – DILUTIONS (REQUESTED)

Fecal Coliform / Total Coliform: 10, 1, -1 10, -2 10, -3 10, -4 10, -5 10, -6 10

Fecal Streptococci: 10, 1, -1 10, -2 10, -3 10, -4 10, -5 10, -6 10

Fecal coli #100 ml ☐ MPN (24) P31615, ☐ MF (25) P31613,

☐ Fecal Strept MPN/100ml (26) P31677,

☐ Tot coli MPN/100 ml (27) P31505,

BIOCHEMICAL OXYGEN DEMAND

INITIAL D.O. (lab.) __________ SAMPLE

SEED YES ☐ NO ☐

CONC. %

BOD __

☐ BOD 5-DAY (28) P310, 6-DAY (29) P312,

☐ COD (30) P340,

☐ TOC (31) P00680,

- ☐ Color Pt - Cou (32) P00080,
- ☐ Turbidity (33) P00076,
- ☐ Suspended Solids (34) P00530,
- ☐ Suspended Solids Ash (35) P00540,
- ☐ Tot. Solids (36) P00500,
- ☐ Tot. Solids - Ash (37) P00510,
- ☑ Tot. Dissolved Solids (TDS) (38) P70300,

- ☐ pH (LAB) (39) P00403,
- ☐ Alkalinity as $CaCO_3$ (40) P00410,
- ☐ Min. Acidity as $CaCO_3$ (41) P00436,
- ☑ Chloride (42) P00940,
- ☐ MBAS (43) P38260,
- ☑ Phenols (44) P32730,
- ☐ Hardness - tot as $CaCO_3$ (45) P00900,
- ☑ Sulfate (46) P00945,
- ☐ Oil & Grease (47) P00556,
- ☐ Petroleum Hydrocarbons (48) P45501,
- ☑ Cyanide (49) P00720,

- ☑ As - tot ug/l (50) P01002,
- ☑ Cd - tot ug/l (51) P01027,
- ☐ Cr - tot ug/l (52) P01034,
- ☑ Cu - tot ug/l (53) P01042,
- ☑ Fe - tot ug/l (54) P01045,
- ☑ Hg - tot ug/l (55) P71900,
- ☐ Mn - tot ug/l (56) P01055,
- ☐ Ni - tot ug/l (57) P01067,
- ☑ Pb - tot ug/l (58) P01051,
- ☑ Zn - tot ug/l (59) P01092,

ADDITIONAL ANALYSIS

- ☑ Barium P
- ☑ Silver P
- ☑ Sodium P
- ☑ Fluoride P
- ☑ Chem. Hex. P

RESULTS mg/l unless otherwise noted

Chemist Review __________

Part 1 (White) - Water Quality Inventory Copy
Part 2 (Canary) - Laboratory Copy
Part 3 (Pink) - Laboratory Copy
Part 4 (Goldenrod) - Field Samplers Copy

T29

CHAIN OF CUSTC

Form VST-010
8/79

PLEASE TYPE OR PRINT WITH BALLPOINT PEN SP-4-86

STATE OF NEW JERSEY
Department of Environmental Protection
Division of Water Resources
WATER ANALYSIS

MUNICIPALITY Boonton Twp.	COUNTY Morris	STREAM —
FACILITY Dowty - RFL	LOCATION Powerville Rd.	
REPRESENTATIVE	TITLE	COLL NAME Tony Altieri
REMARKS		222-24D

BACT. LAB NO.	
DATE REC'D.	
BOTTLE NO.	41056
DATE REC'D.	
STORET ENT.	
READ	

STATION IDENTIFICATION NUMBER: SC.

YR. MO. DAY: 86 01 23

HOUR:

FIELD ANALYSIS

☐ Water Temp °C	P10.	
☐ D.O.-Winkler	P300.	
☐ D.O.-Probe	P299.	
☐ pH (Field)	P400.	
☐ Sample Depth-ft.	P3.	
☐ Gage Height-ft.	P65.	
☐ Spec. Cond. @ 25 °C	P95.	
☐ Salinity °/oo	P480.	
☐ Tide Stage	P70211.	

BACTERIOLOGICAL - DILUTIONS (REQUESTED)

Fecal Coliform / Total Coliform	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}
Fecal Streptococci	10	1	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}

Fecal coli /100 ml ☐ MPN P31615. ☐ MF P31613.

☐ Fecal Strept MPN /100 ml P31677.

☐ Tot coli MPN /100 ml P31505.

BIOCHEMICAL OXYGEN DEMAND

INITIAL D.O. (lab.) ______ SAMPLE

SEED YES ☐ NO ☐

CONC.%

BOD

☐ BOD ☐ 5-DAY P310. ☐ 6-DAY P312.

ANALYSIS	UNITS	PARAMETER	VALUE	RMKS.
☐		P		
☑ Spec. Cond.		P		
☐		P		
☑ V.O. Scan		P		
☐		P		
☐		P		
☐		P		
☐		P		
☐		P		
☐		P		
☐		P		
☐		P		
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☐		P		
☐		P		
☐		P		
☐		P		
☐		P		
☐		P		
☐		P		

CHAIN OF CUSTODY

DATE	TIME	FROM (NAME)	TO (NAME)
		V.O. Control Blanks # C-43134	

Chemist Review T30

Part 1 - Water Quality Inventory Copy
Part 2 - Chemistry Copy
Part 3 - Water Resources Copy (For Transmiss
Part 4 - Bacteriology Copy

GROUND/WATER TECHNOLOGY, INC.

100 Ford Road, Suite C-5
Denville, New Jersey 07834
(201) 625-5558

RECEIVED
2994
APR 16 1985
Dept. Environmental Protection
Division Water Resources
Bureau Ground Water Discharge Permits

April 12, 1985

Ms. Melinda Dower
N.J. Department of Environmental Protection
Bureau of Ground Water Discharge Permits
P.O. Box CN-029
Trenton, New Jersey 08625

RE: DOWTY RFL INDUSTRIES, BOONTON, NEW JERSEY
NJPDES PERMIT NO. NJ0099104

Dear Ms. Dower:

Please find attached one copy of a letter to the Bureau of Hazardous Waste Classification and Manifest (BHWCM) with the results of the additional testing requested by their Ms. Sonya Shashowa. Please contact us should you receive the results of the classification from BHWCM.

Very truly yours,

GROUND/WATER TECHNOLOGY, INC.

Gary J. Cluen

Gary J. Cluen
Project Manager

GJC:gw

Attachment

ATTACHMENT U I

GROUND/WATER
TECHNOLOGY, INC.

100 Ford Road, Suite C-5
Denville, New Jersey 07834
(201) 625-5558

April 12, 1985

Ms. Sonya Shashowa
N.J. Department of Environmental Protection
Division of Waste Management
Bureau of Hazardous Waste Classification and Manifest
32 East Hanover Street
Trenton, New Jersey 08650

RE: DOWTY RFL INDUSTRIES, BOONTON, NEW JERSEY
NJPDES PERMIT NO. NJ0099104

Dear Ms. Shashowa:

As per your request, soil, sludge and lagoon water samples at the RFL facility have been tested for the following additional analyses:

E.P. Toxicity: Sulphide Reactivity (all samples)

Flash Point (lagoon water samples only)

Laboratory reports on the above are attached for your review. Data has been previously submitted for the E.P. Toxicity: Cyanide Reactivity as indicated on the attached copies of the 2/15/85 analyses sheets.

The analyses on the soil and sludge were performed on the same samples which were retrieved on 2/15/85 and stored at the laboratory. The additional analyses on the lagoon water were performed on new samples collected 3/29/85 in the general vicinity of the locations of the 2/15/85 sampling.

Since we would like to initiate lagoon closure fairly soon, we would appreciate any effort on your part to process the classification quickly. Ms. Melinda Dower (Bureau of Ground Water Discharge Permits) is in charge of reviewing the lagoon closure proceedings by NJDEP; she can be contacted at (609) 292-0424 should you require her assistance.

UZ

Ms. Sonya Shashowa April 12, 1985
N.J. Department of Environmental Protection Page 2

We trust that this information is sufficient for your evaluation requirements. Should you require further information or clarification on the above, please contact us.

Very truly yours,

GROUND/WATER TECHNOLOGY, INC.

Gary J. Cluen

Gary J. Cluen
Project Manager

GJC:gw

Attachment

cc: Mr. Jack Slater - RFL
Ms. Melinda Dower -NJDEP
Mr. Steven Caretsky

U3

NJDEP Certified Drinking Water/Wastewater
Laboratory ID #14116

ICM
INDUSTRIAL
CORROSION
MANAGEMENT
INCORPORATED
1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

REPORT DATE: April 5, 1985

LAB # 39984

CLIENT: R F L INDUSTRIES

SAMPLE SOURCE: WATER - Lagoon Upgrade

SAMPLE DATE: 3/29/85 SAMPLED BY: ICM-RK AT LAB DATE: 3/29/85

E P TOXICITY
REACTIVITY SECTION
Leachate Analysis (CFR Vol. 45, No. 98)

Parameter	Result
Total Cyanide	Previously reported (see attached)
Total Sulfide (as S)	LT 0.005
Flash Point (Pensky-Marten Closed Cup Method)	GT 98 °C
Boiled @	98 °C

Results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor
Vice President

ET/jmg
LT=Less Than
GT=Greater Than

APR 11 1985
GROUND WATER TECHNOLOGY INC.

V4

INDUSTRIAL CORROSION MANAGEMENT INCORPORATED

1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

State Certified Drinking Water/Wastewater Laboratory ID # 14116

REPORT DATE: March 1, 1985

LAB # 38491

SAMPLE SOURCE: RFL INDUSTRIES - BOONTON

SAMPLE ID: Water upgrade of Lagoon

SAMPLE DATE: 2/15/85 TAKEN BY: ICM-RK AT LAB DATE: 2/15/85 1:00

TREATED AS A LIQUID SAMPLE

EP TOXICITY TEST

Leachate Analysis (CFR Vol. 45, No. 98)

PARAMETERS TESTED Inorganic Chemicals by AA	TEST RESULT as mg/l	Duplicate Result	MAXIMUM PERMISSIBLE Concentration as mg/l
Arsenic	0.02		5.0
Barium	LT 0.435		100.0
Cadmium	LT 0.007		1.0
Chromium	LT 0.014		5.0
Lead	LT 0.068 .05		5.0
Mercury	LT 0.025 .002		0.2
Selenium	LT 0.005		1.0
Silver	LT 0.033 .05		5.0

	Result	Dup.Result
Copper	0.090	
Fluoride	1.45	
pH (units)	8.18	
TOX	0.020	

Total Cyanide ---------------------------- LT 0.001

LT=Less than

All results reported in mg/l (ppm), unless otherwise stated.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor, Vice President

NJDEP Certified Drinking Water/Wastewater Laboratory ID #14116

INDUSTRIAL CORROSION MANAGEMENT INCORPORATED

1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

REPORT DATE: April 5, 1985

LAB # 38494

CLIENT: R F L INDUSTRIES

SAMPLE SOURCE: Sludge Upgrade of Lagoon

SAMPLE DATE: 2/15/85 SAMPLED BY: ICM-RK AT LAB DATE: 2/15/85 1:00

Re-Activated: 3/28/85

E P TOXICITY
REACTIVITY SECTION
Leachate Analysis (CFR Vol. 45, No. 98)

Parameter	Result
Total Cyanide	Previously reported (see attached)
Total Sulfide (as S)	LT 0.165

Results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor
Vice President

ET/jmg
LT=Less Than

APR 11 1985

GROUND WATER TECHNOLOGY INC.

06

INDUSTRIAL CORROSION MANAGEMENT INCORPORATED
1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

State Certified Drinking Water/Wastewater Laboratory ID # 14116

REPORT DATE: March 1, 1985

LAB # 38494

SAMPLE SOURCE: RFL INDUSTRIES - BOONTON

SAMPLE ID: SLUDGE UPGRADE OF LAGOON

SAMPLE DATE: 2/15/85 TAKEN BY: ICM-RK AT LAB DATE: 2/15/85 1:00

27

EP TOXICITY TEST

Leachate Analysis (CFR Vol. 45, No. 98)

PARAMETERS TESTED Inorganic Chemicals by AA	TEST RESULT as mg/l	Duplicate Result	MAXIMUM PERMISSIBLE Concentration as mg/l
Arsenic	LT 0.01		5.0
Barium	LT 4.35	LT 0.348	100.0
Cadmium	LT 0.007	LT 0.006	1.0
Chromium	LT 0.014	LT 0.015	5.0
Lead	0.466	0.500	5.0
Mercury	LT 0.025		0.2
Selenium	LT 0.005		1.0
Silver	LT 0.033		5.0

ANALYSIS PERFORMED ON SOLID SAMPLE

		Result	Dup. Result
Total Cyanide	0.722		
Copper		26,395	
Fluoride		875	
pH (units)		7.63	
TOX		0.746	

LT=Less than

Solid sample results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor, Vice President

INDUSTRIAL
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INCORPORATED

1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

NJDEP Certified Drinking Water/Wastewater
Laboratory ID #14116

REPORT DATE: April 5, 1985

LAB # 38497

CLIENT: R F L INDUSTRIES

SAMPLE SOURCE: Dirt Up Grade Lagoon

SAMPLE DATE: 2/15/85 SAMPLED BY: ICM-RK AT LAB DATE: 2/15/85 1:00

Re-Activated: 3/28/85

E P TOXICITY
REACTIVITY SECTION
Leachate Analysis (CFR Vol. 45, No. 98)

Parameter	Result
Total Cyanide	Previously reported (see attached)
Total Sulfide (as S)	LT 0.077

Results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor
Vice President

ET/jmg
LT=Less Than

APR 11 1985

GROUND WATER TECHNOLOGY INC.

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1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

State Certified Drinking Water/Wastewater Laboratory ID # 14116

REPORT DATE: March 1, 1985

LAB # 38497

SAMPLE SOURCE: RFL INDUSTRIES - BOONTON

SAMPLE ID: DIRT UPGRADE OF LAGOON

SAMPLE DATE: 2/15/85 TAKEN BY: ICM-RK AT LAB DATE: 2/15/85 1:00

EP TOXICITY TEST
Leachate Analysis (CFR Vol. 45, No. 98)

PARAMETERS TESTED Inorganic Chemicals by AA	TEST RESULT as mg/l	Duplicate Result	MAXIMUM PERMISSIBLE Concentration as mg/l
Arsenic	0.02		5.0
Barium	LT 0.435	LT 0.348	100.0
Cadmium	LT 0.007	LT 0.006	1.0
Chromium	LT 0.014	LT 0.015	5.0
Lead	LT 0.068	LT 0.063	5.0
Mercury	LT 0.025		0.2
Selenium	LT 0.005		1.0
Silver	LT 0.033		5.0

ANALYSIS PERFORMED ON SOLID SAMPLE

	Result	Dup. Result
Total Cyanide	LT 0.042	
Copper	108	
Fluoride	274	
pH (units)	6.59	
TOX	0.020	

LT=Less than

Solid sample results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor, Vice President

INDUSTRIAL CORROSION MANAGEMENT INCORPORATED

1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

NJDEP Certified Drinking Water/Wastewater Laboratory ID #14116

REPORT DATE: April 5, 1985

LAB #: 39985

CLIENT: R F L INDUSTRIES

SAMPLE SOURCE: WATER - Lagoon Middle

SAMPLE DATE: 3/29/85 SAMPLED BY: ICM-RK AT LAB DATE: 3/29/85

E P TOXICITY
REACTIVITY SECTION
Leachate Analysis (CFR Vol. 45, No. 98)

Parameter	Result
Total Cyanide	Previously reported (see attached)
Total Sulfide (as S)	LT 0.005
Flash Point (Pensky-Marten Closed Cup Method)	GT 99 °C
Boiled @	99 °C

Results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor
Vice President

ET/jmg
LT=Less Than
GT=Greater Than

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INDUSTRIAL CORROSION MANAGEMENT INCORPORATED
1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

State Certified Drinking Water/Wastewater Laboratory ID # 14115

REPORT DATE: March 1, 1985

LAB # 38492

SAMPLE SOURCE: RFL INDUSTRIES - BOONTON SAMPLE ID: Water middle of Lagoon

SAMPLE DATE: 2/15/85 TAKEN BY: ICM-RK AT LAB DATE: 2/15/85 1:00

TREATED AS A LIQUID SAMPLE

EP TOXICITY TEST

Leachate Analysis (CFR Vol. 45, No. 98)

PARAMETERS TESTED Inorganic Chemicals by AA	TEST RESULT as mg/l		Duplicate Result	MAXIMUM PERMISSIBLE Concentration as mg/l
Arsenic	0.05	.05		5.0
Barium	LT 0.435			100.0
Cadmium	LT 0.007			1.0
Chromium	LT 0.014			5.0
Lead	LT 0.068	.05		5.0
Mercury	LT 0.025	.002		0.2
Selenium	0.008			1.0
Silver	LT 0.033			5.0

Total Cyanide 0.001

	Result	Dup.Result
Copper	LT 0.051	
Fluoride	1.20	
pH (units)	8.54	
TOX	0.010	

LT=Less than

Results reported in mg/l (ppm), unless otherwise stated.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor, Vice President

NJDEP Certified Drinking Water/Wastewater Laboratory ID #14116

ICM
INDUSTRIAL CORROSION MANAGEMENT INCORPORATED
1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

REPORT DATE: April 5, 1985

LAB # 38495

CLIENT: R F L INDUSTRIES

SAMPLE SOURCE: Sludge Middle of Lagoon

SAMPLE DATE: 2/15/85 SAMPLED BY: ICM-RK AT LAB DATE: 2/15/85 1:00

Re-Activated: 3/28/85

E P TOXICITY
REACTIVITY SECTION
Leachate Analysis (CFR Vol. 45, No. 98)

Parameter	Result
Total Cyanide	Previously reported (see attached)
Total Sulfide (as S)	LT 0.393

Results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor
Vice President

ET/jmg
LT=Less Than

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1152 ROUTE 10, RANDOLPH NEW JERSEY 07869 201-584-0330

State Certified Drinking Water/Wastewater Laboratory ID # 1-116

REPORT DATE: March 1, 1985

LAB # 38495

SAMPLE SOURCE: RFL INDUSTRIES - BOONTON   SAMPLE ID: SLUDGE MIDDLE OF LAGOON

SAMPLE DATE: 2/15/85   TAKEN BY: ICM-RK   AT LAB DATE: 2/15/85 1:00

U13

EP TOXICITY TEST

Leachate Analysis (CFR Vol. 45, No. 98)

PARAMETERS TESTED Inorganic Chemicals by AA	TEST RESULT as mg/l	Duplicate Result	MAXIMUM PERMISSIBLE Concentration as mg/l
Arsenic	0.06		5.0
Barium	2.61	2.52	100.0
Cadmium	0.023	0.026	1.0
Chromium	0.031		5.0
Lead	0.190		5.0
Mercury	LT 0.025		0.2
Selenium	0.007		1.0
Silver	LT 0.033		5.0

ANALYSIS PERFORMED ON SOLID SAMPLE

	Result	Dup. Result
Total Cyanide	0.768	
Copper	5,896	6,057
Fluoride	4,913	
pH (units)	8.76	
TOX	0.040	

LT=Less than

Solid sample results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor, Vice President

ICM INDUSTRIAL CORROSION MANAGEMENT INCORPORATED
1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

NJDEP Certified Drinking Water/Wastewater Laboratory ID #14116

REPORT DATE: April 5, 1985

LAB # 38498

CLIENT: R F L INDUSTRIES

SAMPLE SOURCE: Dirt Middle of Lagoon

SAMPLE DATE: 2/15/85 SAMPLED BY: ICM-RK AT LAB DATE: 2/15/85 1:00

Re-Activated: 3/28/85

E P TOXICITY
REACTIVITY SECTION
Leachate Analysis (CFR Vol. 45, No. 98)

Parameter	Result
Total Cyanide	Previously reported (see attached)
Total Sulfide (as S)	LT 0.085

Results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor
Vice President

ET/jmg
LT=Less Than

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INDUSTRIAL CORROSION MANAGEMENT INCORPORATED

1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

State Certified Drinking Water/Wastewater Laboratory ID # 14

REPORT DATE: March 1, 1985

LAB # 38498

SAMPLE SOURCE: RFL INDUSTRIES - BOONTON

SAMPLE ID: DIRT MIDDLE OF LAGOON

SAMPLE DATE: 2/15/85 TAKEN BY: ICM-RK AT LAB DATE: 2/15/85 1:00

EP TOXICITY TEST
Leachate Analysis (CFR Vol. 45, No. 98)

PARAMETERS TESTED Inorganic Chemicals by AA	TEST RESULT as mg/l	Duplicate Result	MAXIMUM PERMISSIBLE Concentration as mg/l
Arsenic	0.03		5.0
Barium	LT 0.435	LT 0.348	100.0
Cadmium	LT 0.007	LT 0.006	1.0
Chromium	LT 0.014	LT 0.015	5.0
Lead	LT 0.068	LT 0.063	5.0
Mercury	LT 0.025		0.2
Selenium	LT 0.005		1.0
Silver	LT 0.033		5.0

ANALYSIS PERFORMED ON SOLID SAMPLE

	Result
Total Cyanide	0.123

	Result	Dup. Result
Copper	359	
Fluoride	198	
pH (units)	7.42	
TOX	0.010	

LT=Less than

Solid sample results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor, Vice President

INDUSTRIAL CORROSION MANAGEMENT INCORPORATED

1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

NJDEP Certified Drinking Water/Wastewater Laboratory ID #14116

REPORT DATE: April 5, 1985

LAB # 39986

CLIENT: R F L INDUSTRIES

SAMPLE SOURCE: WATER - Lagoon Downgrade

SAMPLE DATE: 3/29/85 SAMPLED BY: ICM-RK AT LAB DATE: 3/29/85

E P TOXICITY
REACTIVITY SECTION
Leachate Analysis (CFR Vol. 45, No. 98)

Parameter	Result
Total Cyanide	Previously reported (see attached)
Total Sulfide (as S)	LT 0.005
Flash Point (Pensky-Marten Closed Cup Method)	GT 98 °C
Boiled @	98 °C

Results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor
Vice President

ET/jmg
LT=Less Than
GT=Greater Than

U16

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INCORPORATED

1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

State Certified Drinking Water/Wastewater Laboratory ID # 1411

REPORT DATE: March 1, 1985

LAB #38493

SAMPLE SOURCE: RFL INDUSTRIES - BOONTON

SAMPLE ID: Water Downgrade of Lagoon

SAMPLE DATE: 2/15/85 TAKEN BY: ICM-RK AT LAB DATE: 2/15/85 1:00

TREATED AS A LIQUID SAMPLE

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EP TOXICITY TEST
Leachate Analysis (CFR Vol. 45, No. 98)

PARAMETERS TESTED Inorganic Chemicals by AA	TEST RESULT as mg/l	Duplicate Result	MAXIMUM PERMISSIBLE Concentration as mg/l
Arsenic	0.01		5.0
Barium	LT 0.435		100.0
Cadmium	LT 0.007		1.0
Chromium	LT 0.014		5.0
Lead	LT 0.068		5.0
Mercury	LT 0.025		0.2
Selenium	LT 0.005		1.0
Silver	LT 0.033		5.0

	Result	Dup.Result
Copper	0.090	
Fluoride	3.30	
pH (units)	8.53	
TOX	0.030	

Total Cyanide ---------- LT 0.001

LT=Less than

Results reported in mg/l (ppm), unless otherwise stated.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor, Vice President

NJDEP Certified Drinking Water/Wastewater Laboratory ID #14116

INDUSTRIAL CORROSION MANAGEMENT INCORPORATED

1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

REPORT DATE: April 5, 1985

LAB # 38496

CLIENT: R F L INDUSTRIES

SAMPLE SOURCE: Sludge Down Grade

SAMPLE DATE: 2/15/85 SAMPLED BY: ICM-RK AT LAB DATE: 2/15/85 1:00

Re-Activated: 3/28/85

E P TOXICITY
REACTIVITY SECTION
Leachate Analysis (CFR Vol. 45, No. 98)

Parameter	Result
Total Cyanide	Previously reported (see attached)
Total Sulfide (as S)	0.534

Results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor
Vice President

ET/jmg
LT=Less Than

018

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INCORPORATED
1152 ROUTE 10 RANDOLPH, NEW JERSEY 07869 201-584-0330

State Certified Drinking Water/Wastewater Laboratory ID # 141[illegible]

REPORT DATE: March 1, 1985

LAB # 38496

SAMPLE SOURCE: RFL INDUSTRIES - BOONTON

SAMPLE ID: SLUDGE DOWNGRADE OF LAGOON

SAMPLE DATE: 2/15/85 TAKEN BY: ICM-RK AT LAB DATE: 2/15/85 1:00

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EP TOXICITY TEST
Leachate Analysis (CFR Vol. 45, No. 98)

PARAMETERS TESTED Inorganic Chemicals by AA	TEST RESULT as mg/l	Duplicate Result	MAXIMUM PERMISSIBLE Concentration as mg/l
Arsenic	0.04		5.0
Barium	0.870	0.957	100.0
Cadmium	0.027	0.023	1.0
Chromium	0.028	0.031	5.0
Lead	0.284	0.256	5.0
Mercury	LT 0.025		0.2
Selenium	0.008		1.0
Silver	LT 0.033		5.0

ANALYSIS PERFORMED ON SOLID SAMPLE

			Result	Dup.Result
Total Cyanide	LT 0.288	Copper	40,290	
		Fluoride	796	
		pH (units)	6.87	
		TOX	0.230	

LT=Less than

Solid sample results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor, Vice President

INDUSTRIAL
CORROSION
MANAGEMENT
INCORPORATED

1152 ROUTE 10, RANDOLPH, NEW JERSEY 07869 201-584-0330

NJDEP Certified Drinking Water/Wastewater
Laboratory ID #14116

REPORT DATE: April 5, 1985

LAB # 38499

CLIENT: R F L INDUSTRIES

SAMPLE SOURCE: Dirt Down Grade

SAMPLE DATE: 2/15/85 SAMPLED BY: ICM-RK AT LAB DATE: 2/15/85 1:0

Re-Activated: 3/28/85

E P TOXICITY
REACTIVITY SECTION
Leachate Analysis (CFR Vol. 45, No. 98)

Parameter	Result
Total Cyanide	Previously reported (see attached)
Total Sulfide (as S)	LT 0.086

Results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor
Vice President

ET/jmg
LT=Less Than

U20

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INDUSTRIAL
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INCORPORATED

1152 ROUTE 10 RANDOLPH, NEW JERSEY 07869 201-584-0330

State Certified Drinking Water/Wastewater Laboratory ID # 1411[illegible]

REPORT DATE: March 1, 1985

LAB # 38499

SAMPLE SOURCE: RFL INDUSTRIES - BOONTON

SAMPLE ID: Dirt Downgrade of Lagoon

SAMPLE DATE: 2/15/85

TAKEN BY: ICM-RK

AT LAB DATE: 2/15/85 1:00

EP TOXICITY TEST

Leachate Analysis (CFR Vol. 45, No. 98)

PARAMETERS TESTED Inorganic Chemicals by AA	TEST RESULT as mg/l	Duplicate Result	MAXIMUM PERMISSIBLE Concentration as mg/l
Arsenic	LT 0.01		5.0
Barium	LT 0.435	LT 0.348	100.0
Cadmium	LT 0.007	LT 0.006	1.0
Chromium	LT 0.014	LT 0.015	5.0
Lead	LT 0.068	LT 0.063	5.0
Mercury	LT 0.025		0.2
Selenium	LT 0.005		1.0
Silver	LT 0.033		5.0

ANALYSIS PERFORMED ON SOLID SAMPLE

	Result	Dup. Result
Total Cyanide	0.055	
Copper	584	
Fluoride	165	
pH (units)	6.30	
TOX	0.020	

LT=Less than

Solid sample results reported in mg/kg dry weight basis.

INDUSTRIAL CORROSION MANAGEMENT, INC.

Edwin Tichenor, Vice President

CLOSURE PLAN

RFL INDUSTRIES, INC..

NJ 0099104

GROUND/WATER TECHNOLOGY, INC.

GROUND-WATER TECHNOLOGY INC.
100 FORD RD., SUITE C-5
DENVILLE, NEW JERSEY 07834

ATTACHMENT VI

I. PLAN PURPOSE AND ORGANIZATION:

In accordance with the Resource Conservation and Recovery Act (RCRA) of 1976, 40 CFR, Part 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subparts G and K, and State of New Jersey, Department of Environmental Protection, Hazardous Waste Regulations (7:26-9.8), (7:26-11.3), and (7:14A-6.5 [d] 6), the following Closure Plan is being implemented to ensure:

1. That the need for further maintenance is minimized.

2. That the post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the groundwater or surface waters or the atmosphere is controlled, minimized, or eliminated to the extent necessary to protect human health and the environment.

This Closure Plan is based upon a state-of-the-art assessment of the potential risk to public health and environment posed by sudden or planned abandonment of the subject facility. The major factors entering into assessment of the risk posed by closure of a hazardous waste management facility relate to characteristics of:

1. The hazardous waste itself.

2. The environmental setting.

3. The means of treatment, storage and/or disposal.

4. The environmental pathways by which hazardous waste constituents may travel.

5. The human and ecological resources which could be impacted.

The Closure Plan contained in the following pages is divided into three (3) sections: General Facility Description, Lagoon Closure, and Closure Cost Estimate.

V2

II. GENERAL FACILITY DESCRIPTION:

RFL Industries, Inc. is a diversified electronic components manufacturer for the communications industry. RFL Industries, Inc., is a hazardous waste generator and treater/disposer with EPA I.D. No. NJ D002156677. The facility encompasses approximately 17 acres in the Township of Boonton, Morris County, New Jersey. The hazardous waste treatment/dispsal facility encompasses approximately 5,000 square feet. The facility is owned and operated by RFL Industries, Inc., (Dowty RFL Industires, Inc., Powerville Road, Boonton, New Jersey 07005; 201-334-3100). A site plan of the facility is provided on Figure 1, Appendix A.

Waste Types and Characteristics - Industrial waste waters discharged to the infiltration-percolation lagoon were generated from the manufacture of printed circuit boards and the chemical treatment of aluminum and steel prior to painting with water based acrylic paints. These operations resulted in the discharge of approximately 3,000 gpd of hazardous wastewater until December 1980, when the entire PC board manufacturing operation was suspended. From December 1980 until July 1983, approximately 100 gpd of hazardous wastewater from the remaining operations were discharged to the lagoon. The specific wastes discharged to the lagoon and their characteristics are listed on Table 1.

Waste Quantities - There are no records which would indicate the quantities of specific wastes disposed of via the wastewater discharge during the operating life of the facility.

Hazardous Waste Treatment/Disposal Practices - The hazardous waste treatment/disposal operation at the facility consists of one infiltration-percolation lagoon equipped with a spray aerator. The lagoon is located in the southeast section of the facility approximately 300 feet southwest of Building No. 12 (Figure 1). The lagoon is triangular in shape with perimeter dimensions of approximately 120 ft. x 80 ft. x 100 ft. with a maximum depth of approximately 8 feet. Constructed in 1972, the lagoon was formed by excavating to a depth of approximately 2 feet and forming the dike walls with the excavated materials.

The installation of a wastewater treatment/recycle system has enabled RFL Industries, Inc. to remove the infiltration-percolation lagoon from service on July 1, 1983.

V3

TABLE 1

WASTE TYPES AND CHARACTERISTICS

Hazardous Waste No.	Waste Type	Waste Characteristic
U228	Trichloroethylene	Toxic
U226	1,1,1 - Trichloroethane	Toxic
U077	1,2 - Dichloroethane	Toxic
U079	1,1 - Dichloroethylene	Toxic
U078	Toluene	Toxic
U220	Methylene Chloride	Toxic
U210	Tetrachloroethylene	Toxic
D008	Lead	Toxic
D007	Chromium	Toxic
D006	Cadmium	Toxic
P030	Cyanides	Toxic

V4

III. INFILTRATION-PERCOLATION LAGOON CLOSURE:

The initial procedure for closing the Infiltration-Percolation Lagoon will be to submit the closure plan to the EPA Regional Administrator and State DEP at least 180 days prior to the closure date.

The overall closure approach will be to remove from the impoundment:

1. All standing liquids.

2. Wastes and waste residues.

3. Underlying and surrounding contaminated soils.

Closure activities will be conducted by contract personnel. During closure, all contaminated liquids, sludges, and solids will be transported off-site by a licensed hazardous waste hauler to a permitted off-site hazardous waste treatment/storage/disposal facility.

A. SPECIFIC CLOSURE PROCEDURES - The procedures for testing and disposal of hazardous materials are as follows:

1. Free Standing Liquids: There should not be any free standing liquid process wastes in the lagoon at the time of closure. However, there may be some free standing liquid resulting from the accumulation of precipitation. Free standing liquids will be analyzed to determine whether or not they are hazardous by RCRA definition. If the liquids are hazardous they will be removed and transported off-site by a licensed hazardous waste hauler to a permitted hazardous waste treatment/storage/disposal facility. If the liquids prove to be non-hazardous, they will be discharged to the ground via a spray system. In the event that the liquids do not meet the requirements for a discharge to the groundwater, they will be transported by a licensed septic hauler to a POTW for disposal.

2. Waste Residues: Waste residues (sediments) in the lagoon will be analyzed to determine if they are hazardous by RCRA definition. Three (3) core samples will be taken in the lagoon; one in the center and two towards the perifery. Sample locations are shown in Figure 2. The core samples will be analyzed to determine the depth of sediments and degree of hazard posed by the sediments. Because the primary concern with the sludge is heavy metal contamination, EP Toxicity Testing will be performed on each core sample. If the sediments prove to be EP toxic, they will be excavated and transported off-site by a licensed hazardous waste hauler to a permitted hazardous waste treatment/storage/disposal (TSD) facility. If EP toxicity tests prove negative, an EPA headspace analysis will be conducted in order to identify the presence of hazardous organic constituents. If the sediments

V5

prove to be hazardous because of organic contamination, they will be excavated and transported off-site for disposal to a permitted hazardous waste treatment/storage/disposal (TSD) facility. If the sediments prove to be non-hazardous, they will be left in place.

3. <u>Contaminated Soils:</u> Core samples will be taken in the soils at the base of the lagoon and analyzed for contamination. The major concern at this facility is organic contamination as indicated by the presence of organic conpounds at elevated levels in the groundwater monitoring wells in the vicinity of the lagoon. Although heavy metal concentrations in the monitoring wells have consistently been below EPA Interim Primary Drinking Water Standards, analyses for both heavy metals and organic contamination will be conducted.

   If the presence of organic contaminents are detected at hazardous levels, the Organic Vapor Analyzer (OVA) will be used to determine the extent of organic contamination in the soils. The entire impoundment will be scanned using the OVA as will the dikes and soils surrounding the impoundment. Soils will be excavated to a depth at which time the OVA analysis indicates that the level of contamination is within acceptable limits*. All contaminated soils that have been excavated will be transported by a licensed hazardous waste hauler to an off-site, permitted, TSD facility. If the soils prove to be non-hazardous, they will be left in place.
   (* Levels to be set by Ground/Water Technology, Inc., and the Division of Water Resources.)

4. <u>Decontamination of Equipment and Structures:</u> Decontamination of all pumps, piping, appurtenances associated with the lagoon, and equipment used to excavate hazardous materials will begin upon completion of all excavation activities. Decontamination procedures are listed in Table 2. Solutions used for the decontamination of equipment and structures will be collected and tested for hazardous constituents. Rinse solutions that are hazardous will be containerized and shipped by a licensed hazardous waste hauler to a permitted off-site hazardous waste TSD facility. Non-hazardous rinse solutions will be discharged to the sanitary waste disposal system on-site.

5. <u>Final Closure Procedures:</u> The final step in closing the lagoon will include backfilling the excavation with clean fill, covering the fill with 6 inches of clay, 6 inches of topsoil, grading to the natural contour of the site, and seeding to establish a vegetative cover.

   A complete schedule of closure activities and their estimated time of completion is outlined in Table 3.

B. <u>ENVIRONMENTAL MONITORING DURING CLOSURE</u> - The monitoring systems that will be in operation during closure are outlined below:

V6

TABLE 2

General Facility Decontamination
Equipment Items and Methods

Equipment/ Structure	Decontamination/ Disposal Method
Backhoe	High Pressure Water Rinse
Front-End Loader	High Pressure Water Rinse
Dump Trucks*	High Pressure Water Rinse
Hoses and Portable Piping	Water Rinse
Fixed Inlet Structures	High Pressure Water Rinse

* Trucks will have wheels washed prior to exiting the facility parking lot during each trip.

V7

TABLE 3

Surface Impoundment Closure Procedures
and Time Requirements

Closure Step	Time Requirement
1. Notify EPA Regional Administrator, State Officials of Closure (Submit Plan)	180 Days prior to Closure
2. Sample and analyze and remaining liquids in the impoundment.*	3 Weeks
3. Remove or stabilize any liquids in impoundment resulting from accumulated rainfall.	1 Week
4. Take sediment samples and analyze for EP toxicity.*	3 Weeks
5. Take soil samples from soils underlying the impoundment and analyze for EP toxicity.*	3 Weeks
6. Decontaminate impoundment piping and other associated appurtenances.	1 Week
7. Decontaminate equipment used to excavate contaminated soils.	1 Week
8. Backfill Excavation.	2 Weeks
9. Grade to natural elevation and revegetate.	2 Weeks

* Completed - See Data Appendix A

V8

1. Groundwater Monitoring: RFL Industries is presently completing the initiation of a full ground water quality assessment plan which has been developed in conjunction with the State of New Jersey, Division of Water Resources. The plan has been designed to enable RFL Industries to determine: (a) the rate and extent of migration of the hazardous waste or hazardous waste constituents in the groundwater; and (b) the concentrations of the hazardous waste constituents in the groundwater. The groundwater monitoring system consists of 4 monitoring wells, with 1 well located hydraulically upgradient and 3 wells located hydraulically downgradient of the lagoon. Samples will be collected quarterly until consistent improvement in groundwater quality is indicated. Sampling parameters are listed in Table 4.

2. Surface Water Monitoring: RFL Industries will continue to monitor surface water throughout the closure period according to the current monitoring schedule.

3. Air Quality Monitoring: There is no air quality monitoring conducted at RFL Industries. Because there will be no free liquids in the lagoon during closure and dust suppressents (i.e., water) will be used during excavations, no significant atmospheric contamination is expected.

V9

TABLE 4

Sampling Parameters

Chloromethane
Bromomethane
Dichlorodifluoromethane
Vinyl Chloride
Chloroethane
Methylene Chloride
Acetone
Trichlorofluoromethane
1,1-Dichloroethylene
1,1-Dichloroethane
t-1,2-Dichloroethylene
Chloroform
Freon 113
1,2-Dichloroethane
t-Butyl Methyl Ether
1,1,1-Trichloroethane
Carbon Tetrachloride
Bromodichloromethane
1,2-Dichloropropane
c-1,3-Dichloropropene
t-1,3-Dichloropropene
TCE (Trichloroethylene)
1,1,2-Trichloroethane
Dibromochloromethane
Benzene
Diisopropyl Ether
2-Chloroethylvinyl Ether
Hexane
Bromoform
1,1,2,2-Tetrachloroethane
PCE (Tetrachloroethylene)
Heptane
Toluene
Chlorobenzene
Ethylbenzene
Hexavalent Chromium (as Cr)
Total Chromium (as Cr)
Total Lead
Total Nickel
Fluoride
Chloride
Total Dissolved Solids
Nitrate (as N)
pH (units)
Oil and Grease

V10

IV. CLOSURE COST ESTIMATE

The estimated cost for closing the infiltration-percolation lagoon according to the plan outlined in Section III is $ 9,760.00. The itemized costs for closure are listed in Table 5.

VII

TABLE 5

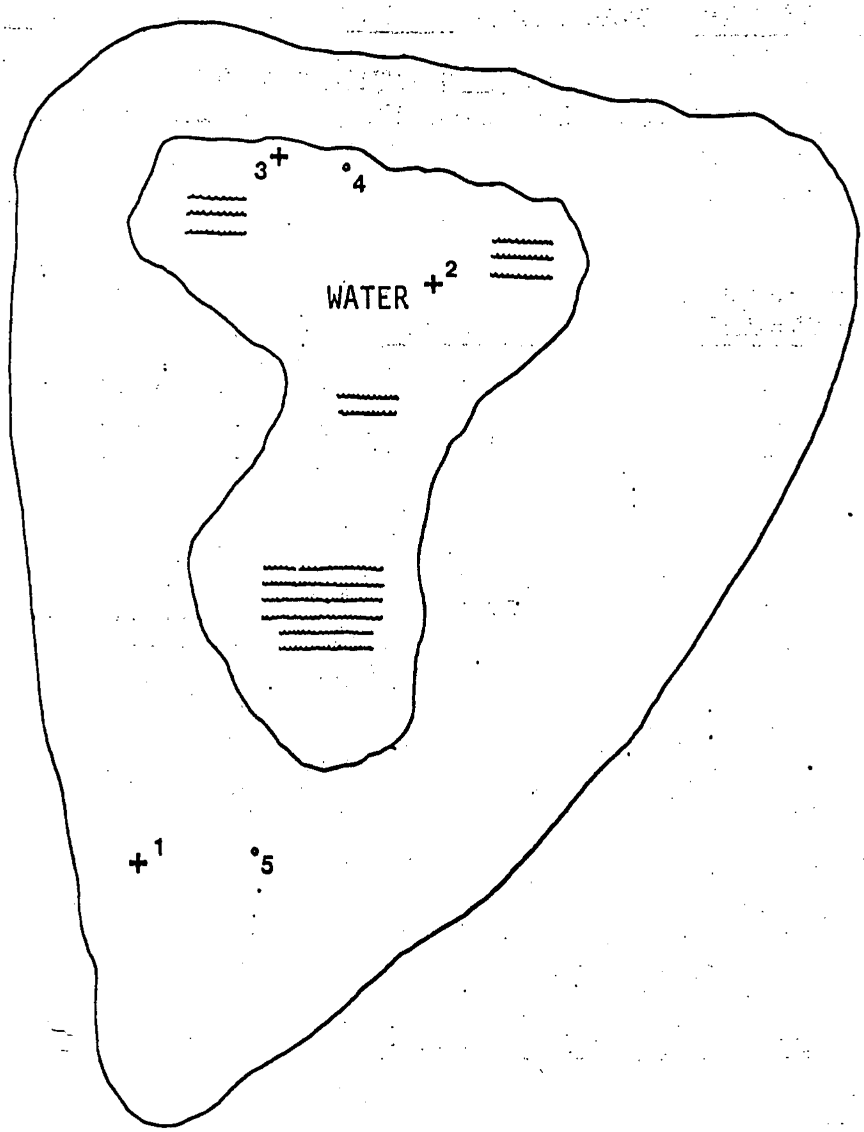
Closure Cost Estimate

Closure Item	Quantity	Unit Cost	Total Cost
1. Sampling and analysis of liquids in the impoundment.	2 Samples	$250.00	$500.00
2. Removal of liquids from the impoundment.	25,900 Gal.	N/C*	N/C*
3. Stabilization of sludges in the impoundment.	60 Tons	$20.00/ Ton	$1,200.00
4. Sampling and analysis of sediments and underlying soils.	6 Samples	$350.00	$2,100.00
5. Decontamination of structures and equipment.	1 Man-Day	$10.00/hr.	$160.00
6. Grading and Movement of dike materials.	1 Day	$750.00	$750.00
7. Clay.	100 cu. yards	$15.00/ cu. yd.	$1,500.00
8. Topsoil.	100 cubic yards	$12.00/ cu. yd.	$1,200.00
9. Revegetation.	4,800 sq. ft.	$.20/sq. ft.	$960.00
10. Engineering Supervision & Certification	5 Days	$100/day	$500.00
	Sub Total		$8,870.00
	10% Contingency		$890.00
	GRAND TOTAL......................		$9,760.00

* Existing Equipment Available

V12

Figure 2
Sediment and Soil Sampling Locations



+ Sediment
° Soil

V13

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
32 E. Hanover St., CN 028, Trenton, N.J. 08625

DR. MARWAN M. SADAT, P.E.
DIRECTOR

LINO F. PEREIRA, P.E.
DEPUTY DIRECTOR

19 JAN 1984

Mr. Steven Caretsky
Senior Environmental Engineer
Groundwater Technology, Inc.
100 Ford Road
P.O. Box 99
Denville, NJ 07834

RE: Facility Status of RFL Industries, Inc., Boonton, New Jersey Facility
EPA ID NO. NJD002156677

Dear Mr. Caretsky:

The Bureau of Hazardous Waste Engineering (the Bureau) has reviewed your correspondence pertaining to the above referenced facility and also reviewed the company's files. As a result of these reviews this Bureau has made the following determinations regarding RFL's current operating status under New Jersey Hazardous Waste Management Regulations:

1. RFL Industries, Inc. filed in its original RCRA Part A application for:

   a. Containerized/drummed storage (S01) hazardous waste activity at 1,650 gallons.

   b. Impoundment treatment (T02) hazardous waste activity at 3,500 gallons per day.

2. The S01 activity filed for is now inappropriate. As described in your letter of January 3, 1984 which you addressed to this Bureau, hazardous waste (chromium sludge) is accumulated in drums and disposed off-site within 90 days or less.

3. The T02 activity filed for refers to an infiltration/percolation lagoon which was used for treatment/disposal of rinse waters (from steel and aluminum conversion coating operations) until July 1, 1983. A closure plan for this facility has been submitted to the Division of Water Resources. It is understood that DWR will review and supervise implementation of the Closure Plan.

As a result of conclusions previously made, the Bureau of Hazardous Waste Engineering will delist RFL's S01 process (no permit required for this activity) provided that the following requirements are complied with regarding handling of the chromium sludge:

ATTACHMENT W-1

19 JAN 1984

It is the company's responsibility to operate within the conditions listed above. To operate a hazardous waste facility without prior approval from the DEP is a violation of the Solid Waste Management Act N.J.S.A. 13:1E-1 *et seq*.

If you have any questions, please contact Mr. Benjamin Esterman of my staff at (609) 984-4061.

Very truly yours,

Frank Coolick

Frank Coolick, Chief
Bureau of Hazardous Waste Engineering

EP14/ch
c: John Trela, DWR

Joel Golumbek, USEPA

W2

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
TRENTON, NEW JERSEY 08625

JOHN W. GASTON JR., P.E.
DIRECTOR

Water Quality Management

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

MAR 07 1986

Mr. Jack Slater, Facilities Manager
Dowty-RFL Industries, Inc.
Powerville Road
Boonton, New Jersey 07005

Re: Lagoon Closure Certification/TSD Delisting
NJPDES Permit No. NJ0099104

Dear Mr. Slater:

The Bureau of Ground Water Quality Management (BGWQM) has received and reviewed your closure certification submittals of December 27, 1985 and February 3, 1986. Based on your submittals, it appears that closure activities were performed in accordance with your aproved closure plan/NJPDES permit that became effective December 15, 1984. Additionally, inspections conducted by my staff on December 6, 1985 and December 20, 1985 also confirmed that closure activities were performed in accordance with the approved closure plan. The BGWQM hereby approves the lagoon closure certification for the T02 hazardous waste activity that was signed by Joseph A. Turcotte, P.E. (NJ P.E. License No. 29410) on December 27, 1985.

It is also our understanding that Dowty-RFL's original RCRA Part A application listed the following activities:

1. Container Storage (S01). This acitvity was formally delisted by the Division of Waste Management in a letter dated January 19, 1984 from Frank Coolick to Steven Caretsky of Ground/Water Technology. Recent inspections confirm that all container storage occurs for less than 90 days.

2. Treatment Surface Impoundment (T02). This activity (which is the subject of this letter) has now been closed in accordance with NJAC 7:26-1 et seq., NJAC 7:14A-1 et seq. and the approved closure plan.

In addition to the above-described closure certification approval, this letter provides written acknowledgement that there are no longer any Treatment, Storage or Disposal (TSD) activities at your facility.

ATTACHMENT XI

Due to the fact that the past year's ground water monitoring data shows no evidence of contamination, the BGWQM is changing the status of the monitoring program from an "alternate assessment" to a "detection" monitoring program. The requirements for the detection monitoring program shall be the same as those presently prescribed in your NJPDES-DGW permit. RFL shall perform quarterly ground water monitoring for a minimum four quarters (beginning with January 1986). If no significiant ground water contamination is found, RFL can then request that their NJPDES permit be terminated.

In summary, the Bureau acknowledges and appreciates the cooperation that RFL and Ground/Water Technology have provided toward closing all TSD activities at their Boonton facility. Also, RFL will no longer be subject to the minimum fee for NJPDES/IWMF facilities. If you have any further questions on any permit matters, please contact the new permit writer asigned to your case, Ms. Susan Dengler, at (609) 292-0424.

Sincerely,

John J. Trela

John J. Trela, Ph.D., Chief
Bureau of Ground Water Quality Mgt.

WQM153:cn

cc: Frank Coolick, DWM-BHWE
Greg Cunningham, DWR-Enforcement
Barry Tornick, USEPA-Permits Section
Kenna Amos, USEPA-Enforcement
Joel Golumbek, USEPA-Program Support
Debra Hammond, DWR-BPA

X2

GROUND/WATER TECHNOLOGY, INC.

100 Ford Road
Denville, New Jersey 07834
(201) 625-5558

Burg?

HAND DELIVERY

December 27, 1985

RECEIVED
DEC 31 1985
Dept. Environmental Protection
Division Water Resources
Bureau Ground Water Discharge Permits

Mr. John Trela, Chief
Bureau of Ground Water Discharge Permits
N.J. Department of Environmental Protection
Box CN-029
Trenton, New Jersey 08625

Dear Mr. Trela:

SUBJECT: LAGOON CLOSURE CERTIFICATION
DOWTY RFL INDUSTRIES
BOONTON, NEW JERSEY
NJPDES PERMIT NO. NJ0099104
EPA I.D. NO. NJD002156677

SUMMARY

During the period of December 2, 1985, through December 10, 1985, closure operations were undertaken at the RFL lagoon. Closure was performed by Chemical Disposal Services, Division of Krammer Chemical, Inc., of Clifton, New Jersey.

Freestanding liquids were removed from the lagoon and transported to the DuPont Company, Environmental Services, Chambers Works, Deepwater, New Jersey. Four licensed tankers transported a total of 15,500 gallons of liquid to this facility. Copies of manifests supporting this are attached.

All sludge, piping, pallets, concrete manhole sump, limestone gravel, and vegetation that were present in the lagoon were removed from the site and trucked to Wayne Disposal, Belleville, Michigan. Twenty-five licensed trucks transported a total of 500 tons of waste to this facility. Copies of shipping manifests are attached. When completed manifests are received from Wayne Disposal, copies will be forwarded to you.

As a result of this closure, Dowty RFL Industries no longer has TDS activities on its premises. They therefore request delisting as a TDS facility.

ATTACHMENT Y1

CLOSURE ACTIVITIES

On-site activities began on December 2, 1985. Representatives of RFL, Ground/Water Technology (G/WT) and Chemical Disposal Services met to prepare test mixtures of cement, bentonite and sludge to determine the type and quantity of additives to be used for sludge stablization. As a result of testing, it was recommended that the primary drying agent be bentonite with small amounts of cement to be added to improve workability. For wet sludge as tested a mixture of one part cement to two parts bentonite to six parts sludge was found to be quite adequate. These ratios were to be field adjusted as necessary depending on the water content of the material.

Next, all the free-draining liquids were removed by placing the suction line of tanker trucks at the deepest portion of the lagoon. In all, 15,500 gallons of liquid were removed from the site. The remaining liquids which did not drain were stabilized together with the sludge as the bentonite and cement kiln dust were mixed in. In total, 84 tons of bentonite (type Slurry Ben 90 - American Colloid Company) and 20 tons of cement kiln dust (Keystone) were added to the sludge in the lagoon. A total of 500 tons of waste was removed from the site giving an average ratio of cement kiln dust: bentonite: and sludge of 1:5:25. It should be noted that a significant portion of the sludge was sufficiently drained to require little to no stabilizing efforts.

Mixing of the bentonite and cement kiln dust into the sludge was performed using a Hisley 1500 backhoe and a Caterpillar 955 front end loader. The sludge was scraped off the underlying material and placed into piles where the bentonite and cement kiln dust were spread and worked into the sludge with the machine buckets. Once sufficiently stabilized, the material was scraped off the bottom natural soils and was placed into lined dump trucks for transportation to and disposal at an out-of-state licensed hazardous landfill facility. The bottom natural soil was found to be clay over most of the area.

The inside surface of the containment dike was scraped and removed from the site with the wastes. The remainder of the dike was used to backfill the depression as the work proceeded. When all the sludge was scraped off the underlying soils in a particular area, the dike was used to backfill that area and it then served as a work platform for reaching further out into the lagoon.

When all waste materials were removed from the site the hole was backfilled using the remaining dike materials and by scraping the native soils in the vicinity around the lagoon to smooth out final contour grades. Grading was completed on December 10, 1985. The site will be covered with straw to protect it from erosion until it can be seeded in the Spring.

Y2

CERTIFICATION

Closure activities at the Dowty RFL Industries' lagoon were completed in general compliance with the intent of the closure plan, NJPDES permit no. NJ0099104 provisions and the bid specifications dated July 25, 1985. The only exception to the above is that both liquid and solid waste were disposed at licensed hazardous waste facilities instead of non-hazardous waste facilities. This was done at RFL's request and for their own protection. As a result of this closure, no TDS activites are ongoing on-site and therefore RFL requests delisting as a TDS facility.

Very truly yours,

GROUND/WATER TECHNOLOGY, INC.

Joseph A. Turcotte, P.E.
Executive Vice President

JAT:gw

Attachments: Manifests

cc: Ms. Melinda Dower
Mr. Jack Slater
Mr. Marwan Sadat
Mr. Stanley Siegel

12/27/85

X3

GROUND/WATER
TECHNOLOGY, INC.

100 Ford Road
Denville, New Jersey 07834
(201) 625-5558

RECEIVED
DEC 31 1985
Dept. Environmental Protection
Division Water Resources
Bureau Ground Water Discharge Permits

December 30, 1985

Mr. Stanley Siegel
U.S. Environmental Protection Agency
Air & Waste Managment Division
26 Federal Plaza - Room 1043
New York, New York 10278

Dear Mr. Siegel:

SUBJECT: DOWTY RFL INDUSTRIES, INC. - BOONTON, NEW JERSEY
SURFACE IMPOUNDMENT - RCRA I.D. #NJD002156677

This letter is to respond to the information requested pursuant to RCRA Section 3007, 42 U.S.C. Section 6927, as per Attachment I of your letter of October 21, 1985, to RFL Industries, Inc. Response to requests nos. 1, 2 and 3 were provided in our letter of November 12, 1985, to you. This letter deals with request no. 4.

Request No. 4. Closure activities were undertaken during the period of December 2, through December 10, 1985. All freestanding waters in the lagoon were removed and transported to DuPont Company, Environmental Services, Chambers Works, Deepwater, New Jersey. All lagoon sludge, piping and miscellaneous materials were removed and transported to Wayne Disposal, Belleville, Michigan. A copy of the lagoon closure certification is attached for your information.

As a result of this lagoon closure, Dowty RFL Industries no longer has any ongoing TDS activities at this location and they have reqeusted delisting as a TDS facility. In particular, we respond to your request no. 4 as follows:

a. During the year prior to November 8, 1985, no hazardous waste was placed into the lagoon.

b. The lagoon ceased receiving wastewater on July 1, 1983.

c. No hazardous waste was placed into the lagoon between November 8, 1985, and December 31, 1985.

Y4

d. All waste in the lagoon was removed during the period of December 2 through December 10, 1985. The closure of the lagoon has been completed as stated in the attached certification.

e. Not applicable, the facility has completed closure requirements.

We trust that the information herein is sufficient response to request no. 4. Should additional information or clarification be required, please contact us.

Very truly yours,

GROUND/WATER TECHNOLOGY, INC.

Gary J. Cluen

Gary J. Cluen
Project Manager

GJC:gw

Attachment: Lagoon Closure Certification

cc: Ms. Melinda Dower
Mr. Marwan Sadat
Mr. Jack Slater

Y5

State of New Jersey
Department of Environmental Protection
Division of Waste Management
CN 028, Trenton, NJ 08625

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. / Manifest Document No.

2. Page 1 of

Information in the shaded areas is not required by Federal law.*

A. State Manifest Document Number: NJA0175011

3. Generator's Name and Mailing Address: [illegible] STATES / [illegible] ROAD / BOONTON [illegible]

B. State Gen. ID: SAME

4. Generator's Phone: (201 [illegible]

5. Transporter 1 Company Name: AMERICAN INDUSTRIAL MARINE

6. US EPA ID Number: [illegible]

C. State Transporter 1 ID: #9907 NJDEP S-10340

7. Transporter 2 Company Name:

8. US EPA ID Number:

D. Transporter's Phone: 201-589-0992

E. State Transporter 2 ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: E.I. DUPONT CHAMBERSWORKS DEEPWATER N.J. 08023

10. US EPA ID Number: NJD002385730

G. State Facility's ID

H. Facility's Phone: 609 299 6622

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE CHEMICALS - NOS D.O.T. NON REGULATED	1	TT	500	G	N/A
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. L-LAGOON WATER
c.
b.
d.

K. Handling codes for Wastes Listed Above
a. T01
c.
b.
d.

15. Special Handling Instructions and Additional Information
TECH # 2094
CONTRACT # DW 1295
RELEASE # 004
SEAL # OWD 158440
OWD 158447

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name	Signature	Date Month Day Year
JACK E SLATER	Jack E Slater	1 22 6 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
Thomas Stapleton	Thomas Stapleton	1 2 0 6 8 5

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date Month Day Year
L RONCACE	L. Roncace	1 2 0 6 8 5

EPA Form 8700-22 (Rev. 4-85) Previous edition obsolete

ATTACHMENT Z1

State of New Jersey
Department of Environmental Protection
Division of Waste Management
CN 028, Trenton, NJ 08625

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. / Manifest Document No.
2. Page 1 of

Information in the shaded areas is not required by Federal law.*

3. Generator's Name and Mailing Address: [illegible] Powerville Rd.
4. Generator's Phone: (201 334-3100 Boonton NJ 07005

A. State Manifest Document Number: NJA0175012
B. State Gen. ID: SAME

5. Transporter 1 Company Name: NAPPI TRUCKING
6. US EPA ID Number: NJD000781947[illegible]

C. State Transporter 1 ID: 1162C - DEP-S-10342
D. Transporter's Phone: 201-566-3000

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter 2 ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: E.I DUPONT CHAMBERS WORKS DEEPWATER NJ 08023
10. US EPA ID Number: NJD002385730

G. State Facility's ID
H. Facility's Phone: 609-299-6122

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE CHEMICALS-NOS D.O.T. NON REGULATED	1	TT	5000	G	N/A
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. L-LAGOON WATER
b.
c.
d.

K. Handling codes for Wastes Listed Above
a. T01
b.
c.
d.

15. Special Handling Instructions and Additional Information

TECH # 2094

CONTRACT # OW1295
RELEASE # 001
SEAL # OWD158456
OWD158448

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name: JACK E SLATER
Signature: Jack E Slater
Date: Month 12 Day 2 Year 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: William Bartley
Signature: William Bartley
Date: Month 12 Day 2 Year 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: L RONCACE
Signature: L Roncace
Date: Month 12 Day 03 Year 85

EPA Form 8700-22 (Rev. 4-85) Previous edition obsolete

22

[illegible] TO GENERATOR

State of New Jersey
Department of Environmental Protection
Division of Waste Management
CN 028, Trenton, NJ 08625

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. / Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.*
3. Generator's Name and Mailing Address: [illegible] POWERVILLE [illegible] BOONTON NJ [illegible]		A. State Manifest Document Number NJA017501[illegible]
4. Generator's Phone (201) 334-3100		B. State Gen. ID SAME
5. Transporter 1 Company Name: NAPPI TRUCKING	6. US EPA ID Number NJD[illegible]477	C. State Transporter 1 ID 10342 11625 NJDS
7. Transporter 2 Company Name	8. US EPA ID Number	D. Transporter's Phone 201-566-3000
		E. State Transporter 2 ID
		F. Transporter's Phone
9. Designated Facility Name and Site Address: E.I. DUPONT CHAMBERS WORKS DEEPWATER, N.J. 08023	10. US EPA ID Number NJD002385730	G. State Facility's ID
		H. Facility's Phone 609-299-6122

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE CHEMICALS - N.O.S. D.O.T. NON-REGULATED	1	TT	5000	G	N/A
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above		K. Handling codes for Wastes Listed Above	
a. L - LAGOON WATER	c.	a. T01	c.
b.	d.	b.	d.

15. Special Handling Instructions and Additional Information

TECH # 2094

CONTRACT # OW 1295
RELEASE # 002
SEAL # OWD158439
OWD158438

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name	Signature	Date Month Day Year
JACK E. SLATER	Jack E. Slater	12 02 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
Don Wear	Don Wear	12 2 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date Month Day Year
L. KONCACE	L. Koncace	12 03 85

EPA Form 8700-22 (Rev. 4-85) Previous edition obsolete

23

3 - [illegible] MAIL TO - GENERATOR

State of New Jersey
Department of Environmental Protection
Division of Waste Management
CN 028, Trenton, NJ 08625

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. [illegible] Manifest Document No. [illegible]

2. Page 1 of

Information in the shaded areas is not required by Federal law.*

3. Generator's Name and Mailing Address [illegible]
POWERVILLE RD,
BOONTON, N.J. [illegible]

4. Generator's Phone (201) 334-2100

A. State Manifest Document Number NJA017501

B. State Gen. ID SAME

5. Transporter 1 Company Name NAPPI TRUCKING

6. US EPA ID Number NJD000814777

C. State Transporter 1 ID 12874 DEP S-10342

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone 201-566-3000

E. State Transporter 2 ID

9. Designated Facility Name and Site Address
E.I. DUPONT
CHAMBERS WORKS
DEEPWATER, N.J. 08023

10. US EPA ID Number NJD002385730

F. Transporter's Phone

G. State Facility's ID

H. Facility's Phone 609-299-6122

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE CHEMICALS - N.O.S, D.O.T. NON-REGULATED	1	TT	5000	G	N/A
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. L - LAGOON WATER
b.
c.
d.

K. Handling codes for Wastes Listed Above
a. T01
b.
c.
d.

15. Special Handling Instructions and Additional Information
TECH #2094
CONTRACT #OW1295
RELEASE #003
SEAL # OWD 158436
OWD 158437

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name JACK E. SLATER Signature Jack E. Slater Date Month Day Year 1 3 0 2 8 5

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name William Bartley Signature William Bartley Date Month Day Year [illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Date Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name L. RONCACE Signature L. Roncace Date Month Day Year [illegible]

EPA Form 8700-22 (Rev. 4-85) Previous edition obsolete

24

[illegible] TO GENERATOR

DNR
MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

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1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

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Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	N J D 0 0 2 1 5 6 6 7 7
Manifest Document No.	9 2 3 5 5
2. Page 1	1 of 1
Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address	DOWTY RFL INDUSTRIES POWERVILLE ROAD BOONTON, NJ 07005
4. Generator's Phone	(201) 334-3100
A. State Manifest Document Number	MI 0692355
B. State Generator's ID	SAME #12826
5. Transporter 1 Company Name	PERRETTI FRIEGHT
6. US EPA ID Number	N J D 0 0 0 6 9 2 3 4 3
C. State Transporter's ID	NJDEP S-7067
D. Transporter's Phone	201-255-5163
7. Transporter 2 Company Name	
8. US EPA ID Number	
E. State Transporter's ID	
F. Transporter's Phone	
9. Designated Facility Name and Site Address	WAYNE DISPOSAL 49350 N. SERVICE DR. BELLEVILLE, MI 48111
10. US EPA ID Number	M I D 0 4 8 0 9 0 6 3 3
G. State Facility's ID	
H. Facility's Phone	313-697-7830

GENERATOR

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS- NOS D.O.T. NON REGULATED	1	D T	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCRXARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH 2079- WC# 1252

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name	Signature	Date (Month Day Year)
JACK G SLATER	Jack E Slater	1 20 5 95

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
John Kennedy	John Kennedy	1 20 5 95

18. Transporter 2 Acknowledgement or Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)
ZS
To be mailed by Generator to: Michigan DNR Box 30038

PR 5110
Rev. 4/85

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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1979, as amended and Act 136, P.A. 1969.

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Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677
Manifest Document No.: 923561
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE RD., BOONTON, NJ 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692356
B. State Generator's ID: SAME #12880

5. Transporter 1 Company Name: PERRETTI FRIEGHT
6. US EPA ID Number: NJD000692343
C. State Transporter's ID: NJDEP S-7067
D. Transporter's Phone: 201-255-5163

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DR., BELLEVILLE, MI 48111
10. US EPA ID Number: MID048090633
G. State Facility's ID
H. Facility's Phone: 313-697-7830

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	WASTE CHEMICALS- NOS D.O.T. NON REGULATED	1	DT		P	021L	N
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH 2079- WC# 1252

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Printed/Typed Name: JACK E SLATER
Signature: Jack E. Slater
Date Month Day Year: 1/2 1/5 8/5

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Otis TRIESTERFIELD JR
Signature: [illegible] JR
Date Month Day Year: 1 2 0 5 8 5

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name:
Signature:
Date Month Day Year:

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)
26
To be mailed by Generator to: Michigan DNR, Box 30038, Lansing, MI

PR 5110 Rev. 4/85

1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

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MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677
Manifest Document No.: 92357
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE ROAD, BOONTON, NJ 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692357
B. State Generator's ID: SAME #12823

5. Transporter 1 Company Name: PERRETTI FRIEGHT
6. US EPA ID Number: NJD000692343
C. State Transporter's ID: NJDEP S-7067
D. Transporter's Phone: 201-255-5163

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DR., BELLEVILLE, MI 48111
10. US EPA ID Number: MID048090633
G. State Facility's ID
H. Facility's Phone: 313-697-7830

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	WASTE CHEMICALS-NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above: S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above: a/ b/ c/ d/

15. Special Handling Instructions and Additional Information
a) TECH 2079- WC# 1252

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: JACK E SLATER
Signature: Jack E. Slater
Date (Month Day Year): 12 06 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Bob Riker
Signature: Bob Riker
Date (Month Day Year): 12 06 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name
Signature
Date (Month Day Year)

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)

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To be mailed by Generator

Michigan DNR
Box 30038

PR 5110
Rev. 4/85

DNR
MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

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1973, as amended and Act 136, P.A. 1969.
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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N J D 0 0 2 1 5 6 6 7 7
Manifest Document No.: 9 2 3 5 8
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
DOWTY RFL INDUSTRIES
POWERVILLE RD.
BOONTON, NJ 07005

4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692358
B. State Generator's ID: SAME #12825

5. Transporter 1 Company Name: PERRETTI FRIEGHT
6. US EPA ID Number: N J D 0 0 0 6 9 2 3 4 3
C. State Transporter's ID: NJDEPS-7067
D. Transporter's Phone: 201-255-5163

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
WAYNE DISPOSAL
49350 N. SERVICE DR.
BELLEVILLE, MI 48111

10. US EPA ID Number: M I D 0 4 8 0 9 0 6 3 3
G. State Facility's ID
H. Facility's Phone: 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS-NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ 1
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH 2079- WC# 1252

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Date (Month Day Year)
JACK E SLATER	Jack E Slater	02 06 95

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
DANIEL V. MATTEVI	Daniel [illegible]	[illegible] 95

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19

Printed/Typed Name	Signature	Date (Month Day Year)

GENERATOR / TRANSPORTER / FACILITY

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28

Return to DNR ... Box 30038 ... 48909

PR 5110
Rev. 4/85

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. N J D 0 0 2 1 5 6 6 7 7 — Manifest Document No. 9 2 3 5 9
2. Page 1 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
[illegible]
DOWTY RFL INDUSTRIES
POWERVILLE RD
BOONTON, NJ 07005

4. Generator's Phone (201) 334-3100

A. State Manifest Document Number MI 0692359
B. State Generator's ID SAME #12827

5. Transporter 1 Company Name PERRETTI FRIEGHT
6. US EPA ID Number N J D 0 0 0 6 9 2 3 4 3
C. State Transporter's ID NJPEPS-7067
D. Transporter's Phone 201-255-5163

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
WAYNE DISPOSAL
49350 N. SERVICE DR.
BELLEVILLE, MI 48111
10. US EPA ID Number M I D 0 4 8 0 9 0 6 3 3
G. State Facility's ID
H. Facility's Phone 313-697-7830

GENERATOR

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS-NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH 2079- WC# 1252

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Printed/Typed Name	Signature	Date Month Day Year
JACK E SLATER	Jack E. Slater	1 2 0 6 8 5

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
Robert Perretti	Robert Perretti	1 2 0 6 8 5

18. Transporter 2 Acknowledgement or Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date Month Day Year

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)
29
To be mailed by Generator to: Michigan DNR Box 30028

PR 5110
Rev. 4/85

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved OMB No 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677
Manifest Document No.: 92364
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
DOWTY RFL INDUSTRIES
POWERVILLE RD.
BOONTON, NJ 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692364
B. State Generator's ID: SAME #9057

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: PAD064035819
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
WAYNE DISPOSAL
49350 N. SERVICE DR.
BELLEVILLE, MI 48111
10. US EPA ID Number: MID048090633
G. State Facility's ID
H. Facility's Phone: 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS-NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST.

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079 WC# 1252

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Printed/Typed Name: JACK E SLATER
Signature: Jack E Slater
Date (Month Day Year): 1 20 6 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: KARL FEGLEY
Signature: Karl Fegley
Date (Month Day Year): 12 01 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Date (Month Day Year)

GENERATOR — TRANSPORTER — FACILITY

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EPA Form 8700-22 (Rev. 4-85)
Z10
To be mailed by Generator to: Michigan DNR Box 30038 Lansing, MI 48909
PR 5110 Rev. 4/85

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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1969.
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Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJD002156677 Manifest Document No. 92365
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
DOWTY RFL INDUSTRIES
POWERVILLE RD.
BOONTON, NJ 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number MI 0692365
B. State Generator's ID SAME #10457

5. Transporter 1 Company Name HORWITH TRUCKING
6. US EPA ID Number PAD064035819
C. State Transporter's ID NJDEPS 7110
D. Transporter's Phone 215-261-2220

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
WAYNE DISPOSAL
49350 N. SERVICE DR
BELLEVILLE, MI 48111
10. US EPA ID Number MID048090633
G. State Facility's ID
H. Facility's Phone 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS-NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

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Printed/Typed Name JACK E SLATER
Signature Jack E Slater
Date Month Day Year 12 06 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name Howard R. Shaw
Signature Howard R Shaw
Date Month Day Year 12 04 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name
Signature
Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Date Month Day Year

GENERATOR / TRANSPORTER / FACILITY

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EPA Form 8700-22 (Rev. 4-85)
To be mailed by Generator ~~to~~ Michigan DNR Box 30038
PR 5110 Rev. 4/85

211

1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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ATT. ☐ DIS. ☐ REJ. ☐

Please print or type.

Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677
Manifest Document No.: 92366
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
DOWTY RFL INDUSTRIES
POWERVILLE RD
BOONTON, NJ 07005

4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692366
B. State Generator's ID: SAME #12841

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: PAD064035819
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
WAYNE DISPOSAL
49350 N. SERVICE DRIVE
BELLEVILLE, MI 48111

10. US EPA ID Number: MID048090633
G. State Facility's ID
H. Facility's Phone: 313-697-7830

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	WASTE CHEMICALS-NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name: JACK E SLATER
Signature: Jack E. Slater
Date Month Day Year: 12 06 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: WALTER HENSHAW
Signature: Walter Henshaw
Date Month Day Year: 12 06 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name
Signature
Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Date Month Day Year

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)
To be mailed by Generator to: Michigan DNR Box 30038
PR 5110 Rev. 4/85

212

DNR
MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

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1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

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Form Approved. OMB No 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N J D 0 0 2 1 5 6 6 7 7 | Manifest Document No.: 9 2 3 6 7
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
DOWTY RFL INDUSTRIES
POWERVILLE RD
BOONTON, NJ 07005

4. Generator's Phone (201) 334-3100

A. State Manifest Document Number MI 0692367
B. State Generator's ID SAME #9105

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: P A D 0 6 4 0 3 5 8 1 9
C. State Transporter's ID NJDEPS 7110
D. Transporter's Phone 215-261-2220

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
WAYNE DISPOSAL
49350 N. SERVICE DRIVE
BELLEVILLE, MI ~~X~~ 48111

10. US EPA ID Number: M I D 0 4 8 0 9 0 6 3 3
G. State Facility's ID
H. Facility's Phone 313-697-7830

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	WASTE CHEMICALS-NOS D.O.T. NON ~~RG~~ REGULATED	1	DT	40000	P	021L	N
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

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Printed/Typed Name	Signature	Date Month Day Year
JACK E SLATER	Jack E Slater	12 06 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
LONNY J BRYFOGLE	Lonny J Bryfogle	12 06 85

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date Month Day Year

GENERATOR — TRANSPORTER — FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4708 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85) To be mailed by Generator to: Michigan DNR Box 30038

PR 5110 Rev. 4/85

213

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677 Manifest Document No.: 92368
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE RD, BOONTON, NJ 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692368
B. State Generator's ID: SAME #9104

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: PAD064035819

C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DR., BELLEVILLE, MI 48111
10. US EPA ID Number: MID048090633

G. State Facility's ID
H. Facility's Phone: 313-697-7830

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. WASTE ~~XXXXXXXX~~ CHEMICALS- NOS D.O.T. NON REGULATED	1 K	DT	40000	P	021L	N
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name	Signature	Date Month Day Year
JACK E SLATER	Jack E Slater	12 16 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
Gordon Bird	Gordon Bird	12 16 85

18. Transporter 2 Acknowledgement or Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date Month Day Year

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)
Z14
To be mailed by Generator to: Michigan DNR, Box 30038, Lansing, MI 48909
PR 5110 Rev. 4/85

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N J D 0 0 2 1 5 6 6 7 7
Manifest Document No.: 9 2 3 6 9
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
DOWTY ~~SON~~ RFL INDUSTRIES
POWERVILLE RD
BOONTON, NJ 07005

4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692369
B. State Generator's ID: ~~SAME~~ # 9060

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: P A D 0 6 4 0 3 5 8 1 9
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address:
WAYNE DISPOSAL
49350 N. SERVICE DR.
BELLEVILLE, MI 48111

10. US EPA ID Number: M I D 0 4 8 0 9 0 6 3 3
G. State Facility's ID:
H. Facility's Phone: 313-697-7830

GENERATOR

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE ~~XXXXXXXX~~ CHEMICALS-NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above:
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above: a/ / b/ / c/ / d/ /

15. Special Handling Instructions and Additional Information:
a) TECH 2079- WC# 1252

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Printed/Typed Name: JACK E SLATER
Signature: Jack E Slater
Date (Month Day Year): 12 06 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Ricky Seaffles
Signature: Ricky [illegible]
Date (Month Day Year): 12 06 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name:
Signature:
Date (Month Day Year):

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name:
Signature:
Date (Month Day Year):

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)
215
To be mailed by Generator to: Michigan DNR Box 30033 ... 48909

PR 5110
Rev. 4/85

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677
Manifest Document No.: 92370
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE RD, BOONTON, NJ 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692370
B. State Generator's ID: SAME #9084

5. Transporter 1 Company Name: HORWITH R TRUCKING
6. US EPA ID Number: PAD064035819
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 493 N. SERVICE DRIVE, BELLEVILLE, MI 48111
10. US EPA ID Number: MID048090633
G. State Facility's ID
H. Facility's Phone: 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS-NOS D.O.T. NON REGULATED	1 K	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

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Printed/Typed Name: JACK E SLATER
Signature: Jack E Slater
Date (Month Day Year): 12 06 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: KEITH FRITZ
Signature: Keith Fritz
Date (Month Day Year): 12 06 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name
Signature
Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Date (Month Day Year)

GENERATOR / TRANSPORTER / FACILITY

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EPA Form 8700-22 (Rev. 4-85) Z16
To be mailed by Generator to: Michigan DNR Box 30038
PR 5110 Rev. 4/85

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MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677 Manifest Document No.: 92371
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

GENERATOR

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE RD., BOONTON, NJ 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692371
B. State Generator's ID: SAME # 9112

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: PAD064035819
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DR, BELLEVILLE, MI 48111
10. US EPA ID Number: MID048090633
G. State Facility's ID:
H. Facility's Phone: 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS-NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

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Printed/Typed Name	Signature	Date Month Day Year
JACK E SLATER	Jack E Slater	12 06 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
Joe Rushing III	Joe R[illegible] III	12 06 85

18. Transporter 2 Acknowledgement or Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date Month Day Year

EPA Form 8700-22 (Rev. 4-85)

217

To be mailed by generator to: Michigan DNR Box 30038

PR 5110 Rev. 4/85

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Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N J D 0 0 2 1 5 6 6 7 7
Manifest Document No.: 9 2 3 7 2
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE RD, BOONTON, NJ 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692372
B. State Generator's ID: SAME # 9867

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: P A D 0 6 4 0 3 5 8 1 9
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DR, BELLEVILLE, MI 48111
10. US EPA ID Number: M I D 0 4 8 0 9 0 6 3 3
G. State Facility's ID
H. Facility's Phone: 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS-NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S-SOIL, PETROLEUM HYDROCARBONS, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: JACK E SLATER
Signature: Jack E Slater
Date (Month Day Year): 12 06 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANIEL L. EPEIGHT
Signature: Daniel Epeight
Date (Month Day Year): 12 06 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name
Signature
Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Date (Month Day Year)

GENERATOR / TRANSPORTER / FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)
Z18
To be mailed by Generator to: Michigan DNR Box 30038
PR 5110 Rev. 4/85

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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1979, as amended and Act 136, P.A. 1969.

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Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677
Manifest Document No.: 92504
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
DOWTY RFL INDUSTRIES
POWERVILLE ROAD
BOONTON, N.J. 07005

4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692504
B. State Generator's ID: SAME #10459

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: PAD064035819
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
WAYNE DISPOSAL
49350 N. SERVICE DRIVE
BELLEVILLE, MI 48111

10. US EPA ID Number: MID048090633
G. State Facility's ID:
H. Facility's Phone:

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	WASTE CHEMICALS - NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
S - SOIL, OIL, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ 1
b/ 1
c/ 1
d/ 1

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: JACK E SLATER
Signature: Jack E Slater
Date (Month Day Year): 1 20 2 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Michael L Kuhler #556 #171
Signature: Michael L Kuhler #556 #171
Date (Month Day Year): 1 20 3 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name:
Signature:
Date (Month Day Year):

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name:
Signature:
Date (Month Day Year):

GENERATOR
TRANSPORTER
FACILITY

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)
Z19
To be mailed by Generator to: Michigan DNR Box 30038

PR 5110
Rev. 4/85

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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ATT. ☐ DIS. ☐ REJ. ☐

1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Please print or type.

Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677 — Manifest Document No.: 92505
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE ROAD, BOONTON, N.J. 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692505
B. State Generator's ID: SAME #12841

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: PAD064035819

C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DRIVE, BELLEVILLE, MI 48111
10. US EPA ID Number: MID048090633

G. State Facility's ID
H. Facility's Phone: 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS - NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

GENERATOR

J. Additional Descriptions for Materials Listed Above: S - SOIL, OIL, KILN DUST

K. Handling Codes for Wastes Listed Above: a/ b/ c/ d/

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Date (Month Day Year)
JACK E SLATER	Jack E Slater	11 23 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
WALTER HENSHLE	[illegible]	N 23 85

18. Transporter 2 Acknowledgement or Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85) Z20 To be mailed by Generator to: Michigan DNR Box 30038

PR 5110 Rev. 4/85

DNR
MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
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Please print or type.

Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677
Manifest Document No.: 92506
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE ROAD, BOONTON, N.J. 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692506
B. State Generator's ID: SAME #10457

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: PAD064035819
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DRIVE, BELLEVILLE, MI 48111
10. US EPA ID Number: MID048090633
G. State Facility's ID:
H. Facility's Phone: 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS - NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S - SOIL, OIL, KILN DUST
APPROVAL # 1647WC

K. Handling Codes for Wastes Listed Above
a/ b/ c/ d/

15. Special Handling Instructions and Additional Information
a) TECH- 2079 WC# 1252

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: JACK E SLATER
Signature: Jack E. Slater
Date (Month Day Year): 12 05 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Howard P Shaw
Signature: [illegible]
Date (Month Day Year): 12 05 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name:
Signature:
Date (Month Day Year):

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name:
Signature:
Date (Month Day Year):

GENERATOR / TRANSPORTER / FACILITY

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EPA Form 8700-22 (Rev. 4-85)
Z21
To be mailed by Generator to: Michigan DNR, Box 30038, Lansing, MI 48909
PR 5110 Rev. 4/85

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐

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Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. N J D 0 0 2 1 5 6 6 7 7	Manifest Document No. 9 2 5 0 7	2. Page 1 1of1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
DOWTY RFL INDUSTRIES
POWERVILLE ROAD
BOONTON, N.J. 07005

4. Generator's Phone (201) 334-3100

A. State Manifest Document Number MI 0692507

B. State Generator's ID SAME #9120

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: P A D 0 6 4 0 3 5 8 1 9

C. State Transporter's ID NJDEPS 7110

D. Transporter's Phone 215-261-2220

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
WAYNE DISPOSAL
49350 N. SERVICE DRIVE
BELLEVILLE, MI 48111

10. US EPA ID Number: M I D 0 4 8 0 9 0 6 3 3

G. State Facility's ID

H. Facility's Phone 313-697-7830

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER). HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. WASTE CHEMICALS - NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
S - SOIL, OIL KILN DUST

K. Handling Codes for Wastes Listed Above
a/ 1
b/ 1
c/ 1
d/ 1

15. Special Handling Instructions and Additional Information
a) TECH-2079 WC#1252

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Date Month Day Year
JACK E SLATER	Jack E Slater	12 05 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
Roland Mack 533-144	Roland Mack 533-144	12 05 85

18. Transporter 2 Acknowledgement or Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19

Printed/Typed Name	Signature	Date Month Day Year

GENERATOR · TRANSPORTER · FACILITY

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EPA Form 8700 22 (Rev. 4-85)

Z22

To be mailed by Generator to Michigan DNR Box 30038 ... MI 48909

PR 5110 Rev 4/85

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Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N J D 0 0 2 1 5 6 6 7 7 — Manifest Document No.: 9 2 5 0 8
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
DOWTY RFL INDUSTRIES
POWERVILLE ROAD
BOONTON, N.J. 07005

4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692508
B. State Generator's ID: SAME #9866

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: P A D 0 6 4 0 3 5 8 1 9
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
WAYNE DISPOSAL
49350 N. SERVICE DRIVE
BELLEVILLE, MI 48111

10. US EPA ID Number: M I D 0 4 8 0 9 0 6 3 3
G. State Facility's ID:
H. Facility's Phone: 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS - NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S - SOIL, OIL, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

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Printed/Typed Name: JACK E SLATER
Signature: Jack E. Slater
Date Month Day Year: 12 05 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: RANDY S BETZ
Signature: Randy S. Betz
Date Month Day Year: 12 05 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name:
Signature:
Date Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name:
Signature:
Date Month Day Year:

GENERATOR / TRANSPORTER / FACILITY

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EPA Form 8700-22 (Rev. 4-85)

Z23

To be mailed by Generator to: Michigan DNR Box 30038 Lansing, MI 48909

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Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJD002156677 Manifest Document No. 92509
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE ROAD, BOONTON, N.J. 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692509
B. State Generator's ID: SAME #9095

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: PAD064035819

C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DRIVE, BELLEVILLE, MI 48111
10. US EPA ID Number: MID048090633

G. State Facility's ID
H. Facility's Phone: 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS - NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above: S - SOIL, OIL, KILN DUST

K. Handling Codes for Wastes Listed Above: a/ / b/ / c/ / d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC#1252

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Printed/Typed Name: JACK E SLATER — Signature: Jack E Slater — Date (Month Day Year): 12 25 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: LARRY D. MC RAE — Signature: Larry D. McRae — Date (Month Day Year): 11 29 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name — Signature — Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Date (Month Day Year)

GENERATOR / TRANSPORTER / FACILITY

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EPA Form 8700-22 (Rev. 4-85)

224

To be mailed by Generator to: Michigan DNR, Box 30038, Lansing, MI 48909

PR 5110 Rev. 4/85

DNR

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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1969.

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Please print or type.

Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N J D 0 0 2 1 5 6 6 7 7   Manifest Document No.: 9 2 5 1 0

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Dowty RFL Industries, Powerville Rd., Boonton, NJ 07005

4. Generator's Phone (201)334-3100

A. State Manifest Document Number: MI 0692510

B. State Generator's ID: same #12823

5. Transporter 1 Company Name: Perretti Freight

6. US EPA ID Number: N J D 0 0 0 6 9 2 3 4 3

C. State Transporter's ID: NJDEP S-7067

D. Transporter's Phone 201-255-5163

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: Wayne Disposal, 49350 N. Service Dr., Belleville, MI 48111

10. US EPA ID Number: M I D 0 4 8 0 9 0 6 3 3

G. State Facility's ID

H. Facility's Phone 313-697-7830

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		Waste Chemicals NOS D.O.T Non Regulated	1	DT	400000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above

S-Soil, oil kiln, dust

K. Handling Codes for Wastes Listed Above

a/ b/ c/ d/

15. Special Handling Instructions and Additional Information

Tech #2079   WC# 1252

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Date (Month Day Year)
JACK E SLATER	Jack E Slater	12 05 85

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
[illegible]	[illegible]	12 05 85

18. Transporter 2 Acknowledgement or Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Date (Month Day Year)

GENERATOR / TRANSPORTER / FACILITY

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EPA Form 8700-22 (Rev. 4-85)

... mailed by ... Michigan DNR Box 30038 ...

225

PR 5110 Rev. 4/85

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DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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ATT. ☐ DIS. ☐ REJ. ☐

Please print or type.

Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJD002156677 — Manifest Document No.: 92522
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Dowty RFL Industries, Powerville Rd., Boonton, NJ 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692522
B. State Generator's ID: same #12835

5. Transporter 1 Company Name: Perretti Freight
6. US EPA ID Number: NJD000069213413
C. State Transporter's ID: NJDEPS-7067
D. Transporter's Phone: 201-255-5163

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: Wayne Disposal, 49350 N. Service Dr., Belleville, MI 48111
10. US EPA ID Number: MID048090633
G. State Facility's ID
H. Facility's Phone: 313-697-7830

	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.	Waste Chemicals - NOS D.O.T. Non-regulated	1	DT	40000	P	021L	N
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
S-Soil, oil, kilm dust

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
Tech #2079 WC# 1252

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: JACK E SLATER — Signature: Jack E Slater — Date (Month Day Year): 12 05 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANIEL W. MATTEVI — Signature: Daniel W. Mattevi — Date (Month Day Year): 12 05 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name — Signature — Date (Month Day Year)

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Date (Month Day Year)

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

GENERATOR — TRANSPORTER — FACILITY

EPA Form 8700-22 (Rev. 4-85) 226 To be mailed by Generator to: Michigan DNR Box 30038

PR 5110 Rev. 4/85

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, PA 1969

Please print or type.

Form Approved OMB No 2000 0404 Expires 7 31 86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. N J D 0 0 2 1 5 6 6 7 7 9 Manifest Document No. 2 5 2 7
2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE ROAD, BOONTON, N.J. 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692527
B. State Generator's ID: SAME #12837

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: P A D 0 6 4 0 3 5 8 1 9
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DRIVE, BELLEVILLE, MI 48111
10. US EPA ID Number: M I D 0 4 8 0 9 0 6 3 3
G. State Facility's ID
H. Facility's Phone: 313-697-7830

HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	WASTE CHEMICALS - NOS D.O.T. NON REGULATED	1	DT	40000	P	021L N
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above

S - SOIL, OIL, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ b/ c/ d/

15. Special Handling Instructions and Additional Information

a) TECH-2079- WC# 1252

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name: JACK E. SLATER
Signature: Jack E. Slater
Date Month Day Year: 12 06 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: MARTIN J CHOCH
Signature: Martin Choch
Date Month Day Year: 12 06 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name
Signature
Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name
Signature
Date Month Day Year

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE CENTER AT 1-800-424-8802 24 HOURS PER DAY.

EPA Form 8700-22 (Rev. 4-85)

227

Required under authority of Act 64, P.A. 1979, as amended and Act 136, P.A. 1969.

Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

DNR
MICHIGAN DEPARTMENT
OF NATURAL RESOURCES

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Please print or type.

Form Approved. OMB No. 2000-0404 Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. N J D 0 0 2 1 5 6 6 7 7 — Manifest Document No. 9 2 5 2 8
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE RD, BOONTON, N.J. 07005
4. Generator's Phone (201) 334-3100

A. State Manifest Document Number: MI 0692528
B. State Generator's ID: SAME #9976

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: P A D 0 6 4 0 3 5 8 1 1 9
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DRIVE, BELLEVILLE, MI 48111
10. US EPA ID Number: M I D 0 4 8 0 9 0 6 3 3
G. State Facility's ID
H. Facility's Phone: 313-697-7830

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a. ~~WASTEX~~ WASTE CHEMICALS - NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
S - SOIL, OIL, KILN DUST

K. Handling Codes for Wastes Listed Above
a/ /
b/ /
c/ /
d/ /

15. Special Handling Instructions and Additional Information
a) TECH-2079- WC# 1252

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Printed/Typed Name: JACK E SLATER — Signature: Jack E Slater — Date Month Day Year: 1 20 85

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: [illegible] 509 — Signature: [illegible] — Date Month Day Year: 1 20 85

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Date Month Day Year

DNR Form 8700-22 (Rev. 6-85) 228

PR 5110 Rev. 4/85

DNR
MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE
ATT. ☐ DIS. ☐ REJ. ☐

1969.
Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136, P.A. 1969.

Please print or type.

Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N J D 0 0 2 1 5 6 6 7 7 — Manifest Document No.: 9 2 5 2 9
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: DOWTY RFL INDUSTRIES, POWERVILLE ROAD, BOONTON, N.J. 07005
4. Generator's Phone (201-) 334-3100

A. State Manifest Document Number: MI 0692529
B. State Generator's ID: SAME #12839

5. Transporter 1 Company Name: HORWITH TRUCKING
6. US EPA ID Number: PAD 0 6 4 0 3 5 8 1 9
C. State Transporter's ID: NJDEPS 7110
D. Transporter's Phone: 215-261-2220

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address: WAYNE DISPOSAL, 49350 N. SERVICE DRIVE, BELLEVILLE, MI 48111
10. US EPA ID Number: M I D 0 4 8 0 9 0 6 3 3
G. State Facility's ID:
H. Facility's Phone: 313-697-7830

GENERATOR

	HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID NUMBER).	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.	N/H
a.		WASTE CHEMICALS - NOS D.O.T. NON REGULATED	1	DT	40000	P	021L	N
b.								
c.								
d.								

J. Additional Descriptions for Materials Listed Above
S - SOIL, OIL, KILN DUST

K. Handling Codes for Wastes Listed Above
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Printed/Typed Name: JACK E SLATER — Signature: Jack E Slater — Date (Month Day Year): 1 2 06 85

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Thomas Dennis — Signature: Thomas Dennis — Date (Month Day Year): 1 2 06 85

18. Transporter 2 Acknowledgement or Receipt of Materials
Printed/Typed Name: — Signature: — Date (Month Day Year):

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name: — Signature: — Date (Month Day Year):

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EPA Form 8700-22 (Rev. 4-85)

229

Mailed by generator: Michigan DNR Box 30038

PR 5110 Rev. 4/85

Dowty RFL Industries Inc.
Powerville Road Boonton, New Jersey 07005-0239 • Tel: (201) 334-3100 • TWX: 710-987-8352 • FAX NO.: (201) 334-3863

November 19, 1987

N.J.D.E.P.
Division of Hazardous Waste Management
1259 Rt. 46
Parsippany, New Jersey 07826

Attention: Carolyn C. Seifried

Dear Carolyn:

Please find enclosed one copy of the Dowty RFL Industries Inc. revised contingency plan. I have sent copies to the local agencys with return receipt mail as per your suggestion.

Respectfully submitted,

Dowty RFL Industries Inc.

Jack E. Slater

Jack E. Slater
Facilities Manager
NJD 002156677

ATTACHMENT AA1

ADDRESS: POWERVILLE RD., ...
EPA ID#: NJD002156677 TELEPHONE NUMBER: (201) 334-3100

PRIMARY EMERGENCY COORDINATOR: JACK SLATER
ADDRESS: 4 DURHAM RD., ROCKAWAY, NEW JERSEY 07866
TELEPHONE NUMBER: OFFICE: (201) 334-3100 EXT. 219 HOME: (201) 983-9457
RFL SYSTEM SPEED #: 6094

SECONDARY EMERGENCY COORDINATOR: BILL McKEE
ADDRESS: POWERVILLE RD., BOONTON, NEW JERSEY 07005
TELEPHONE NUMBER: OFFICE: (201) 334-3100 HOME: (201) 263-0195
RFL SYSTEM SPEED:#: 6229

EMERGENCY PHONE NUMBERS

ORGANIZATION	RFL SYSTEM SPEED NUMBER	TELEPHONE #
PRIMARY FIRE DEPARTMENT: BOONTON TOWNSHIP	#6002	(201) 334-2419
SECONDARY FIRE DEPARTMENT: RESPONSIBILITY OF BOONTON TWP. FIRE CHIEF		
AMBULANCE SERVICE: BOONTON KIWANIS	#6003	(201) 299-7730
LOCAL POLICE DEPARTMENT: BOONTON TOWNSHIP	#6002	(201) 334-2419
LOCAL STATE POLICE: NETCONG STATION		(201) 347-1000
COUNTY SHERIFFS COMMUNICATION CENTER:		(201) 455-1700
LOCAL HOSPITAL: ST. CLARES, DENVILLE	#6005	(201) 625-6063
HOSPITAL BURN UNIT: ST. BARNABAS, LIVINGSTON		(201) 533-5000
DEP GROUND WATER MANAGEMENT BUREAU:		(609) 292-0424
DEP SOLID WASTE ADMINISTRATION:		(609) 292-7645
STATE EMERGENCY RESPONSE NUMBER:		(201) 548-8730
U.S. EPA REGION II OFFICE:		(212) 264-2525
N.J. BUREAU OF MOTER CARRIER SAFETY:		(609) 989-2276

HOSPITAL EMERGENCY INFORMATION: ALL VICTIMS SHOULD BE TRANSPORTED BY BOONTON KIWANIS AMBULANCE, IF POSSIBLE, TO ST. CLARES HOSPITAL IN DENVILLE. IF VICTIM IS BADLY BURNED, MEDICAL PERSONNEL SHALL MAKE THE DECISION AS TO WHETHER THE BURN UNIT AT ST. BARNABAS IS MOST APPROPRIATE.

JOB DESCRIPTION/FUNCTIONS OF EMERGENCY PERSONNEL:

PRIMARY EMERGENCY COORDINATOR: JACK SLATER
FUNCTION: COORDINATE THE EFFORTS OF ALL EMERGENCY PERSONNEL ON THE SCENE OF A SPILL OR FIRE. PROVIDE TECHNICAL ADVICE AND SUPPORT TO THE PROPER AUTHORITIES AT THE POINT OF THE INCIDENT.

SECONDARY EMERGENCY COORDINATOR: BILL McKEE
ASSIST PRIMARY COORDINATOR AND ASSUME RESPONSIBILITIES IN THE EVENT OF HIS ABSENCE. ASSIST IN THE CLEAN UP OR CONTAINMENT OF LEAKS OR SPILLS.

AA2

HAZARDOUS MATERIALS ON SITE -------------- DOWTY RFL BOONTON PLANT 1987

I HAZARDOUS WASTE BY-PRODUCTS

MATERIAL	LOCATION	QTY.	I.D. #	WASTE #
WASTE FLAMMABLE LIQUID N.O.S.----------	SHED	0-55 GAL.	UN1993	D001
WASTE MERCURY METTALIC ORM-B----------	SHED	0-10 PDS.	NA2809	D009

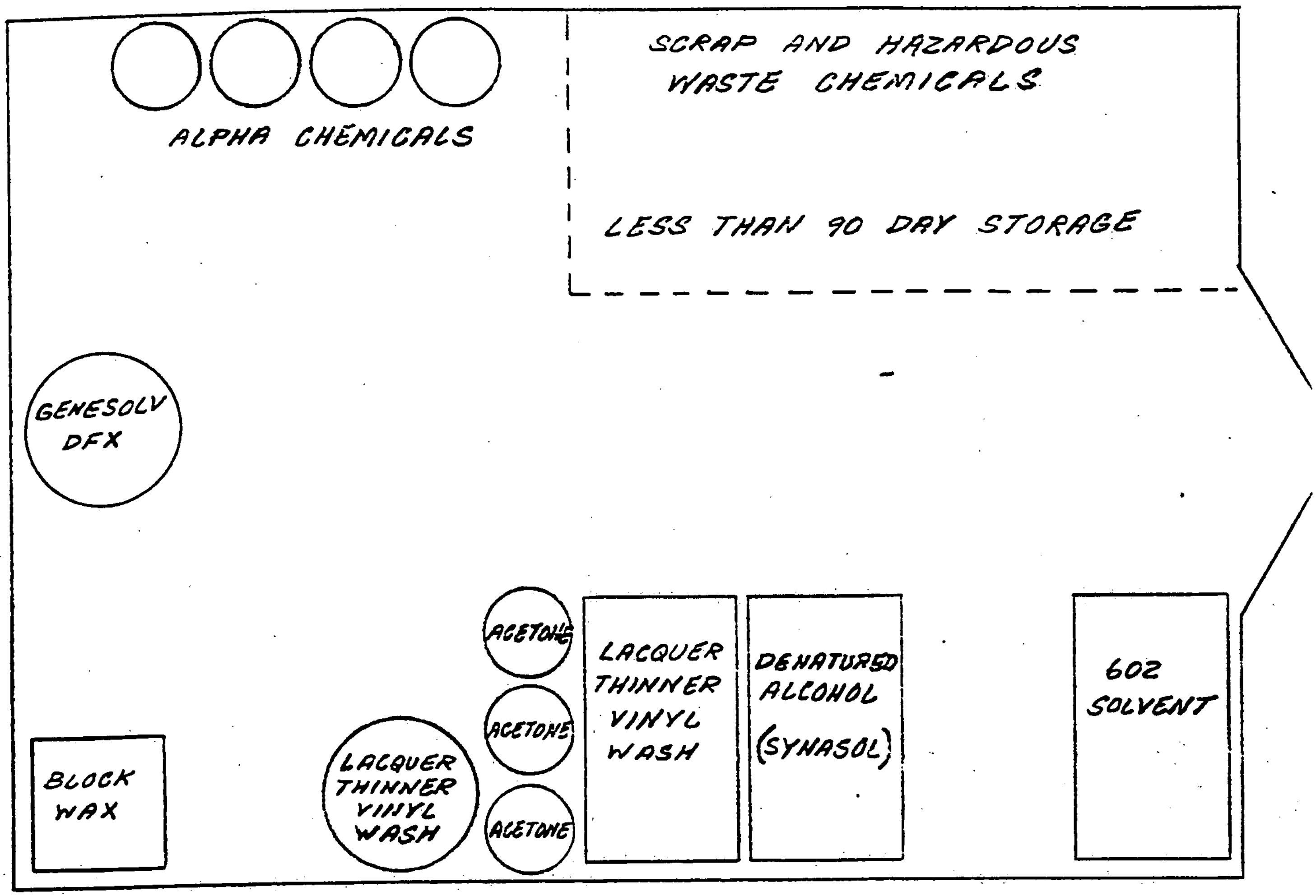
II HAZARDOUS PROCESS CHEMICALS

MATERIAL	LOCATION	QTY.	DOT I.D. #	DOT (*) GUIDE #
LAQUER THINNER VINYL WASH------------	SHED	0-110 GAL.	1245	26
ACETONE--------------------------	SHED	0-55 GAL.	1090	26
GENESOLV--------------------------	SHED/BLD. 7 & BLD. 14	0-80 GAL.		12
602 SOLVENT------------------------	SHED	0-55 GAL.	1897	55
DENATURED ALCOHOL (SYNASOL)----------	SHED	0-55 GAL.	1095	26
ALPHA 450F THINNER------------------	SHED/ BLD.14	0-40 GAL.	1219	26
ALPHA 2444 RINSE AID----------------	SHED/ BLD.14	0-40 GAL.	1760	60
ALPHA 850-25 SOLDER FLUX------------	SHED/ BLD.14	0-40 GAL.		26

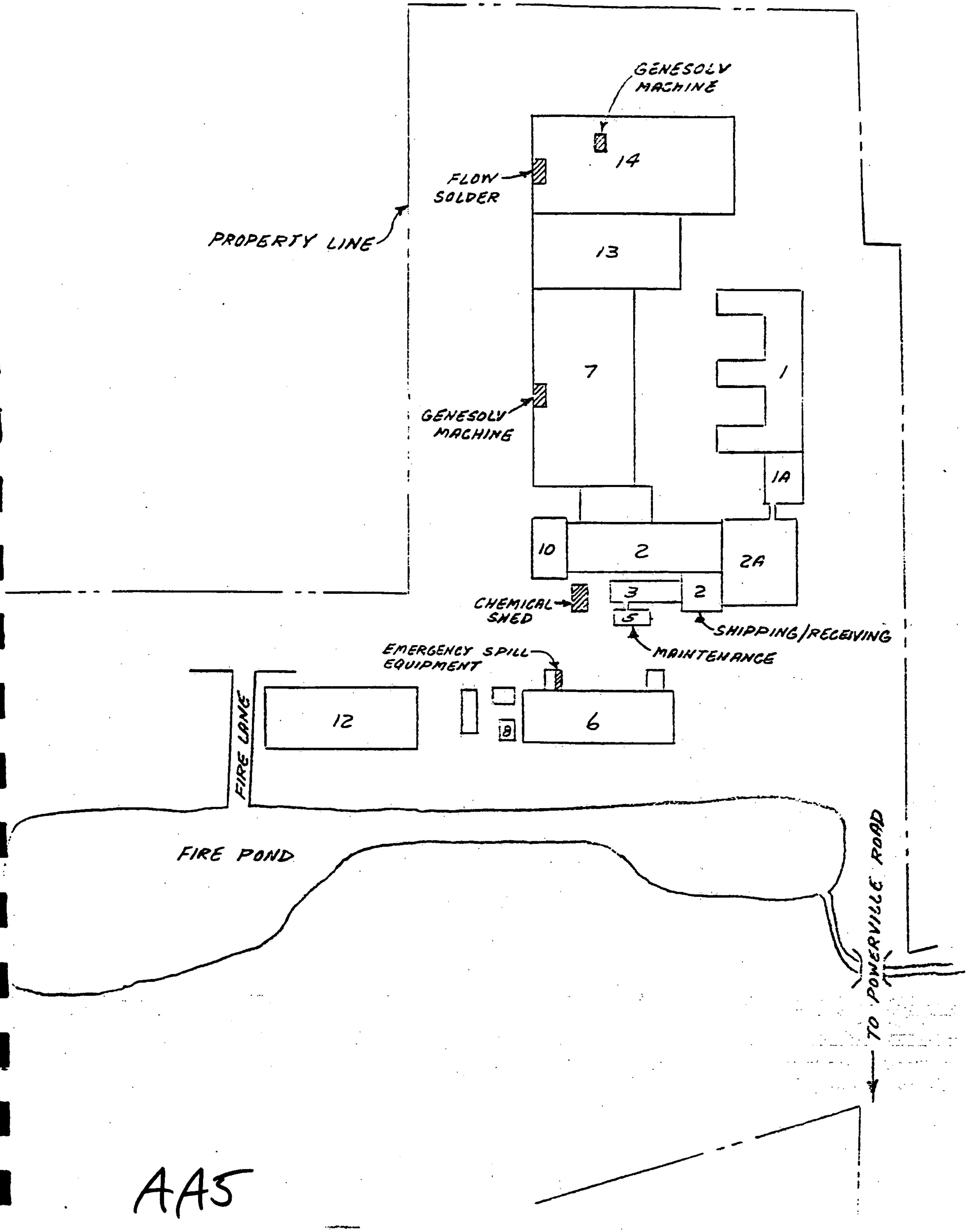
(*) SEE ATTACHED DOT EMERGENCY HANDLING PROCEDURES.

AA3

PROCESS AND WASTE CHEMICAL STORAGE SHED



AA4



GENESOLV MACHINE
14
FLOW SOLDER
PROPERTY LINE
13
7
1
GENESOLV MACHINE
1A
10
2
2A
CHEMICAL SHED
3
2
5
SHIPPING/RECEIVING
MAINTENANCE
EMERGENCY SPILL EQUIPMENT
12
8
6
FIRE LANE
FIRE POND
TO POWERVILLE ROAD

AA5

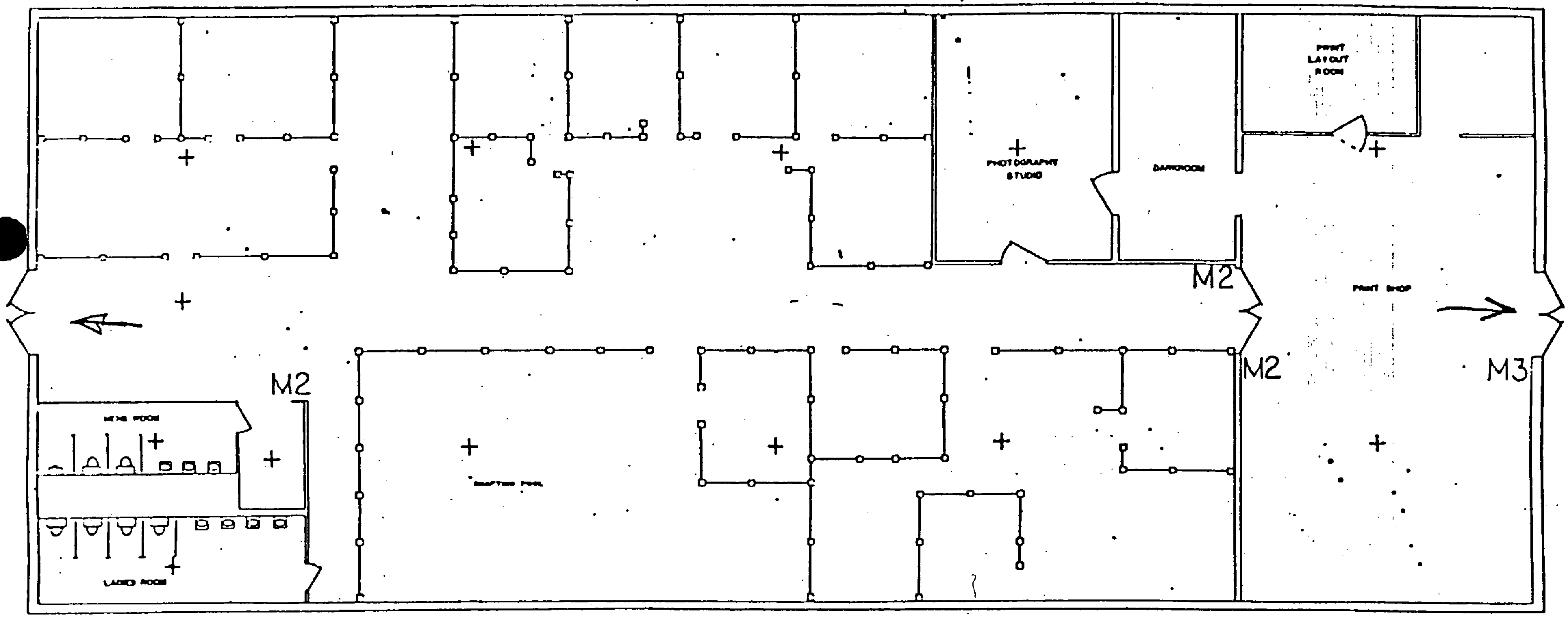
SAFETY ITEM	LOCATION	QUANT
(SPILL CART ONLY)	BUILDING 6	1
FOUR LITER SPILL CONTROL PILLOWS		12
ONE LITER SPILL CONTROL PILLOWS		12
HAZARDOUS WASTE DISPOSAL BAGS		12
TOTAL BODY COVERALLS		2
SAFETY GLOVES		2 PA
SAFETY GOGGLES		2 PA
SAFETY FACE SHIELDS		2
OVER SHOE PROTECTIVE BOOTS		2 PA
SPILL SQUEEGEES, LARGE AND SMALL		1 EA
ACID / DUST TYPE RESPIRATORS		2
DOT APPROVED RECOVERY DRUM, 30 GALLON		1
* ACID NEUTRALIZER (30 LBS)		1
CAUSTIC NEUTRALIZER (20 LBS)		1
BARRICADE TAPE (100 FT. ROLLS)		3
FLASHLIGHT, SAFETY		1
BROOM, SPILL CLEAN UP TYPE		1
DUST PAN		1
MOP		1
MOP BUCKET		1
pH INDICATING PAPER		1 RO
DOT HAZARDOUS MATERIALS EMERGENCY GUIDE		1

AA6

SAFETY ITEM	USE	LOCATION	QUANTITY
(FIRE EXTINGUISHERS)			
CARBON DIOXIDE	ELECTRICAL/OIL	M2 BLDG. 6	2
DRY CHEMICAL	EVERYTHING	M3 BLDG. 6	1
DRY CHEMICAL	EVERYTHING	M3 BLDG. 8	1
CARBON DIOXIDE	ELECTRICAL/OIL	M2 BLDG. 12	3
DRY CHEMICAL	EVERYTHING	M3 BLDG. 12	1
CARBON DIOXIDE	ELECTRICAL/OIL	M2 BLDG. 5	1
DRY CHEMICAL	EVERYTHING	M3 BLDG. 5	2
CARBON DIOXIDE	ELECTRICAL/OIL	M2 BLDG. 3	1
PRESSURIZED WATER	PAPER	M1 BLDG. 3	1
CARBON DIOXIDE	ELECTRICAL/OIL	M2 BLDG. 2	2
DRY CHEMICAL	EVERYTHING	M3 BLDG. 2	2
CARBON DIOXIDE	ELECTRICAL/OIL	M2 BLDG. 10	1
(OTHER EQUIPMENT)			
EMERGENCY EYE WASH		BLDG. 6	1
EMERGENCY SHOWER		BLDG. 6	1
SAFETY GOGGLES		BLDG. 6	6 PAIR
OVER THE SHOE BOOTS		BLDG. 6	1 PAIR
DUST-ACID RESPIRATORS		BLDG. 6	1
PROTECTIVE GLOVES		BLDG. 6	2 PAIR
SAFETY COVERALLS		BLDG. 6	1
FACE SHIELD		BLDG. 6	2

AA7

EMERGENCY EXIT ROUTE



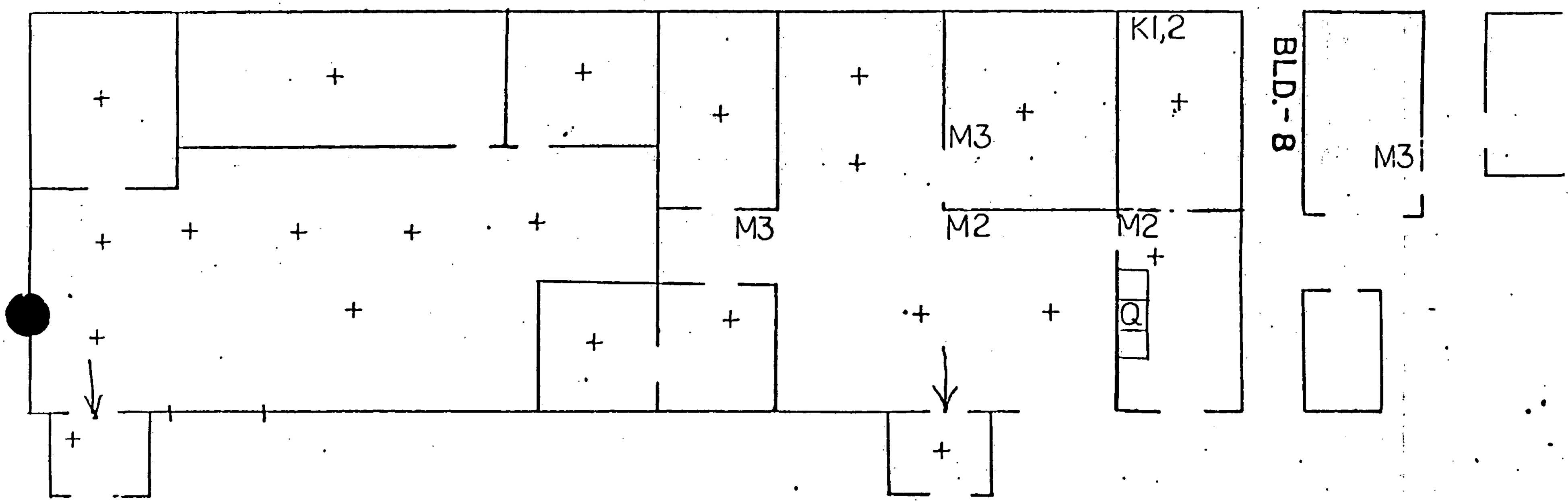
+ ADT SENSOR
M2 CO_2 FIRE EXTINGUISHER
M3 DRY CHEM. "

BLD-12 OFFICE LAYOUT

N

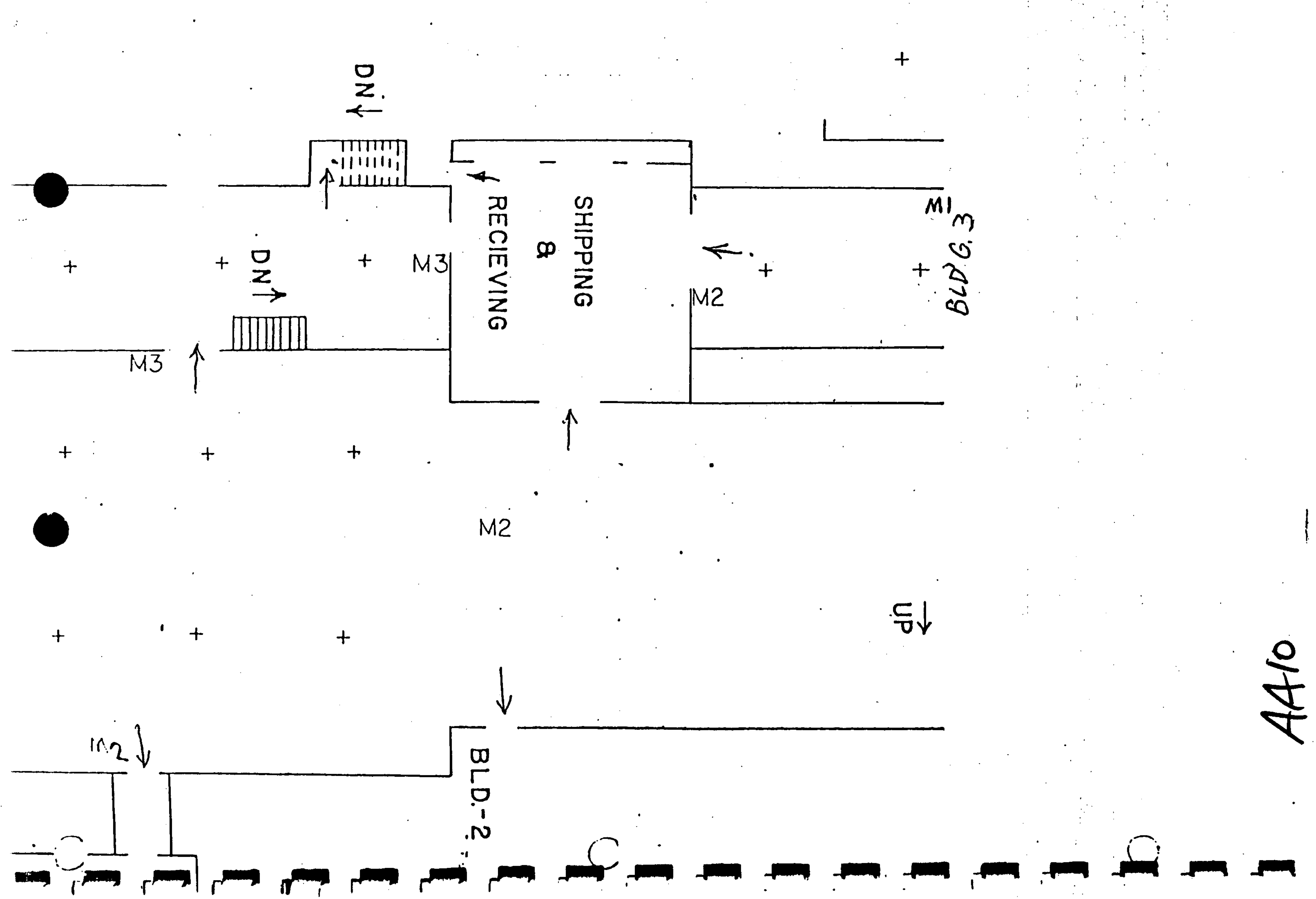
AA8

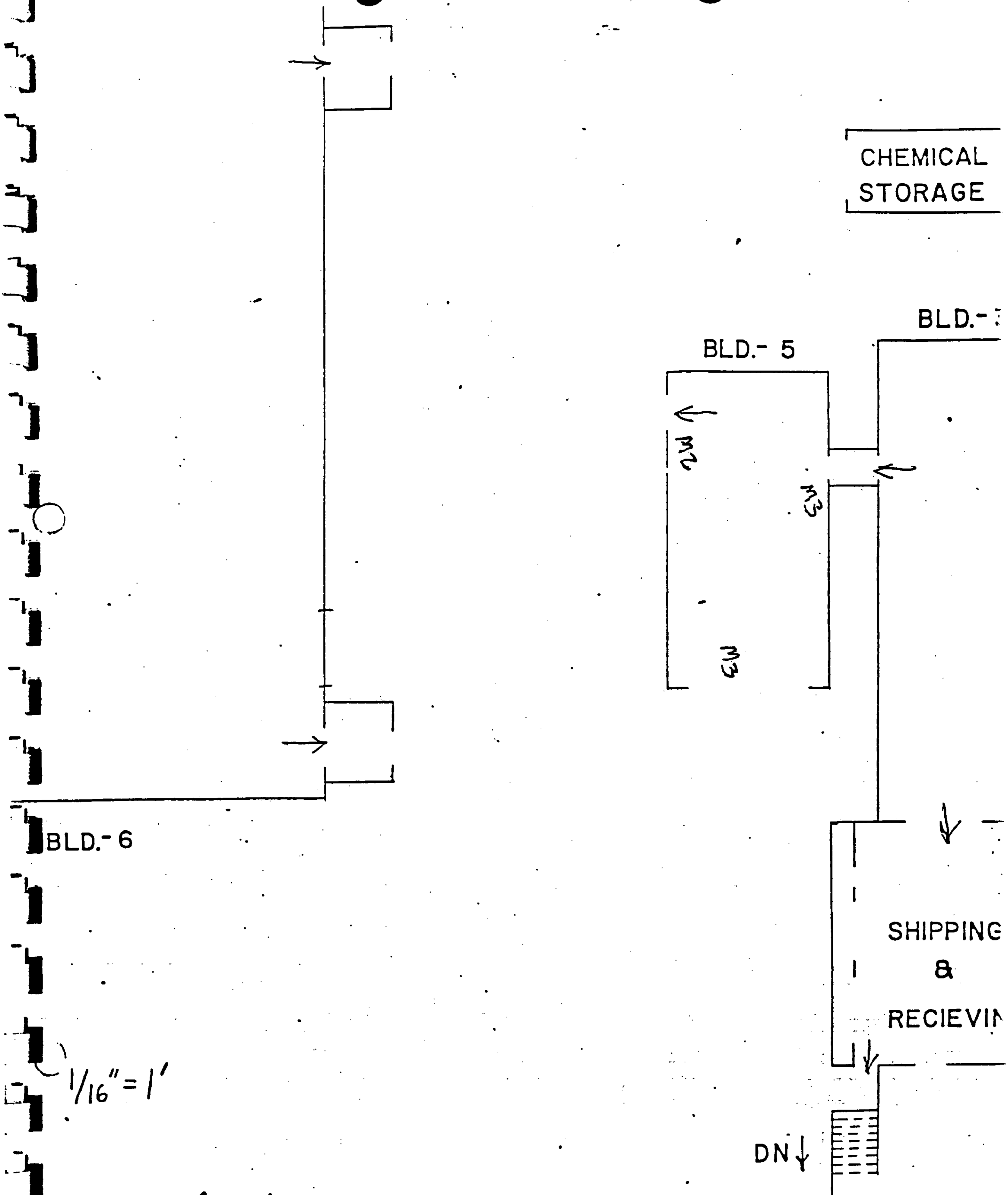
+ ADT SENSORS
M2 CO_2 FIRE EXTINGUISHER
M3 DRY CHEM. "
Q HAZARDOUS MATERIALS STORAGE
K1 EYE WASH
K2 EMERGENCY SHOWER



AA9

2 CC_2 "
3 DRY CHEMICAL "
ADT SENSOR





1/16" = 1'

AA11

IN THE EVENT A SPILL OR LEAK OF HAZARDOUS MATERIAL OR WASTE HAS OCCURED, PROCEDURES FOR HANDLING SUCH AN EMERGENCY CORRECTLY MUST BE CARRIED OUT.

MAINTENANCE PERSONNEL WILL BE DESIGNATED AND TRAINED TO ASSIST THE EMERGENCY COORDINATOR IN THE IMMEDIATE CONTAINMENT AND CLEAN-UP. THE CRITICAL AREAS, WHERE HAZARDOUS PROCESS CHEMICALS ARE STORED OR USED IN LARGE QUANTITIES IS AS FOLLOWS:

1. CHEMICAL STORAGE SHED
   - ACETONE
   - LAQUER THINNER
   - GENESOLV DFX
   - 602 SOLVENT
   - DENATURED ALCOHOL (SYNASOL)
   - ALPHA 450F THINNER
   - ALPHA 2444 RINSE AID
   - ALPHA 850-25 SOLDER FLUX

   HAZARDOUS WASTE GENERATED IS ALSO STORED IN THE SHED. ACCUMULATION AND PERIOD OF STORAGE WILL NOT EXCEED 90 DAYS.

2. BUILDING #14, FLOW SOLDER
   - ALPHA 450F THINNER
   - ALPHA 850-25 SOLDER FLUX
   - ALPHA 2444 RINSE AID

3. BUILDING #7 & #14, GENESOLV MACHINE
   - GENESOLV DFX

4. SHIPPING/RECEIVING
   - INCOMING MATERIALS

THE ABOVE ARE ALL PRIMARY AREAS OF A POSSIBLE SPILL OR LEAK. GOOD AND PROPER MAINTENANCE AND DAILY CHECKING OF DRUMS AND TANKS CAN PREVENT A SPILL OR LEAK. THE ATTACHED DRAWING SHOWS THE LOCATION OF THE ABOVE AREAS. THE LOCATION OF THE EMERGENCY EQUIPMENT IS ALSO MARKED AND THE KEY FOR THE CABINET CAN BE ATTAINED FROM MAINTENANCE.

IN CASE OF A SPILL OR LEAK, MAINTENANCE PERSONNEL MUST FOLLOW INSTRUCTIONS OF THE EMERGENCY COORDINATOR AND, OR, PREPARE AS FOLLOWS:

A. SEAL OFF AREA TO PREVENT INJURY AND ENTRY. TAPE IS IN EMERGENCY CABINET, OR USE OTHER MEANS OF BLOCKING OFF ENTRY.

B. CHECK WITH EMERGENCY COORDINATOR WETHER SPILL IS LIQUID OR SOLID. THE HAZARDOUS MATERIAL BOOKLET WILL GIVE DETAILS AS TO WHAT PROTECTION IS NECESSARY TO BRING NO INJURYS TO ANYONE. BOOK IS LOCATED IN EMERGENCY CABINET.

C. PUT ON PROTECTIVE CLOTHING (BOOTS, SUIT, GLOVES, EYE PROTECTION, MASK) ACCORDINGLY.

D. GET SPILL CONTROL PILLOWS, WASTE BAGS AND/OR 30 GALLON DRUM TO THE SPILL AREA. EQUIPMENT FOR A-B-C-D IS LOCATED IN VESTIBUL AREA OF BUILDING #6.

E. STOP THE SPILL FLOW WITH SPILL PILLOWS IF APPLICABLE AND IF POSSIBLE TRANSFER CHEMICAL FROM LEAKING CONTAINER TO THE EMERGENCY DRUM. CLOSE AND SECURE SUCH UNTIL TRANSPORT. HAZARDOUS MATERIAL BAGS SHOULD BE USED TO CONTAIN SPILL PILLOWS AFTER CHEMICAL IS ABSORBED. ACID OR ALKALINE NEUTRALIZER MAY ALSO BE

USED. CHECK WITH COORDINATOR FIRST. SWEEP UP ABSORBED MATERIALS AND PLACE ALL CLEAN UP PRODUCTS IN THE SPECIAL BAGS.

F. IF FIRST AID IS REQUIRED BY ANYONE BEFORE, DURING, OR AFTER CLEANUP, CALL THE DESIGNATED FIRST AID HELP.

MATT BIDWELL

EARLE SEELY

G. SUITS, BOOTS, AND OTHER EQUIPMENT USED AND WORN DURING CLEANUP MUST BE HOSED DOWN, DRIED AND RETURNED TO THE EMERGENCY CABINET IN BUILDING #6 VESTIBUL. THIS MAY HAVE TO BE DONE OVER DRUMS TO PREVENT THE WATER FROM CONTAMINATING THE SOIL.

COOPERATION AND ALERTNESS, BUT MOST IMPORTANT, QUICK AND PROPER ACTION CAN KEEP A SPILL OF CHEMICALS FROM TURNING INTO A TRAGEDY. IT WILL BE TO EVERYONES BENEFIT TO HANDLE THESE MATTERS WITH CARE AND CAUTION. WE ALL HOPE THESE EMERGENCY PROCEDURES WILL NEVER HAVE TO BE CARRIED OUT, BUT IF AND WHEN AN ACCIDENT OCCURS IT IS TO EVERYONES BENEFIT TO HANDLE THE CLEANUP QUICKLY, PROPERLY AND WITH SAFETY.

AA13

IN THE EVENT OF A FIRE OR SMOKE EMERGENCY, IT WILL BE ESSENTIAL TO FOLLOW AN ESTABLIS SET OF PROCEDURES. DOWTY RFL INDUSTRIES UTILIZES THE A.D.T. (American District Telegraph FIRE ALARM SYSTEM OR AN INPLANT PAGING SYSTEM TO INITIATE A RESPONSE FOR THE INTERNAL FIRE BRIGADE.

SHOULD AN A.D.T. ALARM BELL SOUND IN A BUILDING, THE SUPERVISOR SHOULD IMMEDIATLY EVACUATE THE AREA AS PER THE ATTACHED PLAN, THEN PRESS 7 ON THE NEAREST PHONE AND SAY CODE RED , GIVING THE BUILDING LOCATION AND DEPARTMENT. THE FIRE BRIGADE WILL RESPOND TO THE EMERGENCY AS WELL AS THE LOCAL FIRE DEPARTMENT SINCE IT IS AN AUTOMATIC ALARM. THE FIRE BRIGADE WILL MAKE SURE ALL EMPLOYEES ARE EVACUATED, ALL FANS ARE SHUT OFF, FIRE DOORS CLOSED TO CONTAIN FIRE OR SMOKE,AND DIRECT THE LOCAL FIRE DEPARTMENT TO THE AREA OF EMERGENCY.

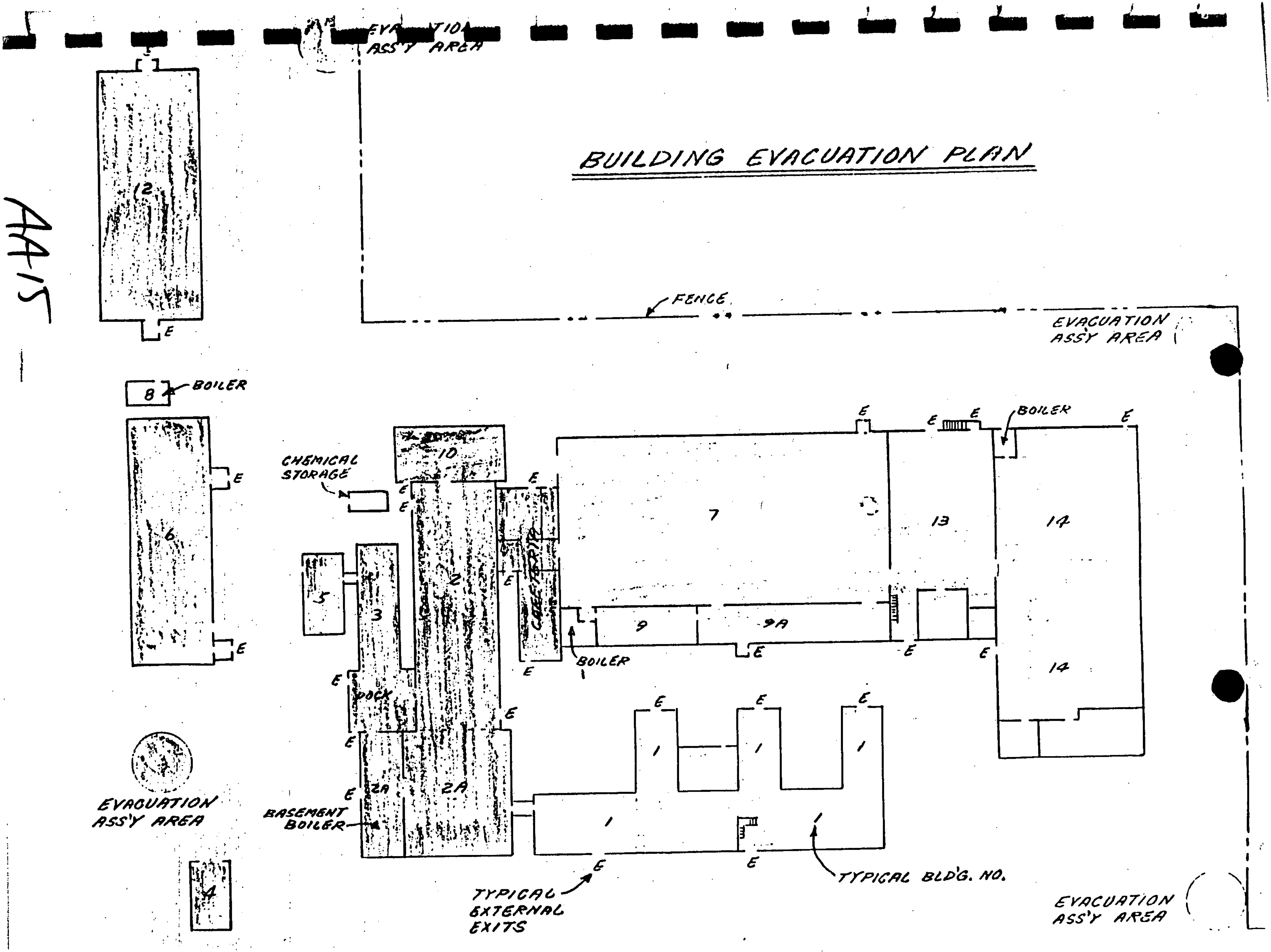
SHOULD THE FIRE BE SMALL IN NATURE WHERE THE A.D.T. ALARM WAS NOT INITIATED OR A SMOK CONDITION. THE SUPERVISOR OR LEAD PERSON WOULD PREES 7 ON THE PHONE AND SAY CODE RED, GIVE THE BUILDING LOCATION AND DEPARTMENT. IMMEDIATLY AFTER, EVACUATE THE AREA OF EMPLOYEES AND CLOSE FIRE DOORS IF POSSIBLE TO CONTAIN FIRE OR SMOKE. THE FIRE BRIGADE WILL RESPOND TO THE EMERGENCY AND DETERMINE IF THE LOCAL FIRE DEPARTMENT IS REQUIRED. IF THE LOCAL FIRE DEPARTMENT IS NOT REQUIRED THE FIRE BRIGADE WILL HANDLE THE EMERGENCY WITH AREA FIRE EXTINGUISHERS OR PORTABLE EXHAUST FANS.

DURING EVACUATION, THE SUPERVISOR SHOULD TRY TO KEEP HIS OR HER GROUP TOGETHER. IMMEDIATELY UPON REACHING THE EVACUATION POINT, THE SUPERVISOR WILL PREPARE A LIST OF ALL HIS PERSONNEL AT THAT POINT. IF THERE IS AN EMPLOYEE MISSING HE SHOULD IMMEDIATLY NOTIFY A FIRE BRIGADE MEMBER.

REENTRY INTO THE AFFECTED AREA WILL BE MADE ONLY AFTER CLEARANCE IS GIVEN BY THE EMERGENCY COORDINATOR. AT HIS DIRECTION, A SIGNAL OR OTHER NOTIFICATION WILL BE GIVEN FOR REENTRY INTO THE FACILITY.

AA14

AA15


BUILDING EVACUATION PLAN
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TYPICAL EXTERNAL EXITS
TYPICAL BLD'G. NO.
EVACUATION ASS'Y AREA

AMERICAN INDUSTRIAL MARINE SERVICES, INC.

P.O. BOX 9128 • NEWARK, NEW JERSEY 07104 • (201) 589-0992

February 21, 1986

R F L Industries Inc.
Powerville Road
Boonton, N.J. 07005
Attn: Jack Slater

Dear Mr. Slater,

American Industrial Marine Services would be pleased to be listed as your spill contractor. Our equipment inventory includes 2 - vacuum trucks, 1 - vactok, and marine support equipment. All of our equipmen is stored in response trailers to allow us to respond quickly to any emergency.

I feel it would be beneficial to both of our companies if we sche uled a site inspection. This would enable us to become familar with your plant and know which areas should be defended first.

I want to thank you for your interest in American Industrial Mari Services. If you have any questions please do not hesitate to call.

Very truly yours,

AMERICAN INDUSTRIAL
MARINE SERVICES, INC.

Harry Whalen

Harry Whalen
Vice President

HW/rm
Encl: EPA permit
NJ DEP permit

AA16

7:26-9.4(b)2 WASTE CHARACTERISTICS

This section describes the chemical and physical nature of the hazardous wastes stored at Dowty RFL Industries facility and the waste analysis plan for sampling, testing, and evaluating the wastes to assure that sufficient information is available for their safe handling.

Chemical and Physical Analyses

Hazardous wastes are stored at the RFL facility at the container storage area, located in the chemical shed. All wastes are stored in sealed and properly labeled 5 gallon containers. The wastes can be grouped into the following general classifications:

- Toxic
- Ignitible
- Corrosive

The wastes generated and stored at the site by RFL are sumarized below:

AA17

Description of Waste	DOT Hazardous Class	Quantity	Units	EPA Waste Type
Waste Methylethylketone	Flammable Liquid	6	1	U159
Waste Flammable Liquid N.O.S.	Flammable Liquid	30	1	D001
Waste Sodium Hydroxide (Flake)	Corrosive Material	600	3	D002
Waste Corrosive Liquid N.O.S.	Corrosive Material	279	1	D002
Waste Alkaline Liquid N.O.S.	Corrosive Material	4	1	D002
Hazardous Waste Liquid N.O.S.	ORM-E	55	1	X850
Waste Corrosive Solid N.O.S.	Corrosive Material	600	3	D002
Waste ORM-A N.O.S.	ORM-A	500	3	F001
Waste Chemicals N.O.S.	Non-regulated	50	3	X910
Waste Mercury, Metallic	ORM-B	20	3	D009
Hazardous Waste Solid N.O.S.	ORM-E	800	3	D002

AA18

Because RFL stores only those wastes generated on-site from processes monitored for production efficiency by plant personnel, the characteristics of the wastes are well known. Furthermore, the composition of the wastes are not expected to change without the plant's knowledge beforehand, or without an indication that an unplanned and uneconomical mistake had occurred in the production process. Table 1 summarizes the waste generated by RFL, and Appendix A contains a list of all hazardous materials on-site, their storage location, their quantities, and a guide for potential hazards, and the estimated amount generated per year. As a result of having extensive knowledge of the waste characteristics, RFL does not require testing to verify that the waste contents have not changed.

RFL will maintain all analytical data from their contracted waste hauler in the operating record and reports the latest analytical results on the sheets supplied by their contracted waste hauler.

Test Parameters

Operating experience has shown that the steel containers used by RFL are compatible with any of the wastes generated on-site and stored in the containers. Furthermore, data in the Chemical

Engineer's handbook indicates that only mineral acids significantly deteriorate steel containers, and no waste mineral acids are generated by RFL.

In order to ensure that wastes are not placed in reused containers containing residual materials that are incompatible, all containers are filled with the contaminated form of the material originally stored in the container. Shop managers and foremen are under strict instructions to contact the environmental coordinator any time a question concerning container management arises.

Sampling

No sampling is conducted by RFL.

Frequency of Analysis

Because all of RFL's hazardous waste streams are from controlled production processes with known inputs and outputs, regular sampling and analysis is not required. Any waste stream will be tested by a contracted laboratory when the inputs to the process change significantly or when the process itself changes significantly. The purpose of such analysis is to identify any changes in characteristics resulting in a necessary change of handling procedures. This frequency of analysis fulfills the frequency requested by RFL's contracted transporter.

Additional Requirements for Wastes Generated Off-Site

This facility only handles on-site generated wastes. Therefore, requirements for wastes received from off-site generators do not apply.

Waste Analysis Plan - Unusual Circumstances

This subsection describes the procedures to be followed under other-than-routine circumstances, specifically spills, leaks, or ruptures of containers in the storage area, and during closure.

As discussed in the Contingency Plan after a spill has been absorbed and the absorbent material scooped up and drummed, the floor of the area will be pressure flushed with water, with the wash water flowing into the sumps. From there, two representative samples of the water are taken with a weighted bottle sampler and analysed for the appropriate contaminants. If the difference between the concentration of the contaminant in the sump water is insignificantly different from the background levels previously monitored, no further analysis is necessary. If not, then the contaminated water from the sump must be appropriately emptied and treated or stored, and the procedure repeated until the concentrations of contaminants no longer meets EPA/NJDEP

AA21

characteristics as a hazardous waste.

The plan for analyzing the sump contents at closure is very similar. The washdown and pressure washing of the floor and ancillary equipment will result in accumulated water in the sumps. Analysis for the appropriate contaminants in replicate samples from the sumps will reveal if further decontamination is required. If the concentration of contaminants is insignificantly different from background levels or is below the hazardous level, then decontamination is complete. If not, the sumps must be properly emptied and the pressure washing, replicate sampling, and analysis procedure repeated until the concentration of contaminants no longer meets EPA/NJDEP characteristics as a hazardous waste.

DEVELOPMENT OF BAT
FOR LIMITATIONS FOR:

RFL Industries
Boonton, New Jersey
07005

February 15, 1982

Submitted to:

U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, New York

and

U.S. Environmental Protection Agency
Office of Water Enforcement
401 M Street, S.W.
Washington, D.C.

Submitted by:

JRB Associates
A Company of Science Applications
40 Eisenhower Drive
Paramus, New Jersey 07652

EPA Contract No. 68-01-5052, DOW 10
JRB Project No. 2-811-03-328-07

ATTACHMENT BB1

I. BACKGROUND

Under EPA Contract No. 68-01-5052, DOW #10, JRB was directed to develop the technical elements of a National Pollution Discharge Elimination System (NPDES) permit consistent with the Consolidated Permit Regulations (40 CFR 122-125) for RFL Industries in Boonton, New Jersey. The firm was visited by JRB engineers on ~~November~~ October 15, 1981. This report proposes permit limitations, a compliance schedule, and monitoring requirements for RFL based on data gathered in the plant visit and from other technical information. This report also outlines the technologies required for complying with the proposed limitations, and costs to install and operate them. The economic effects of imposing these limitations on RFL are also addressed in this report.

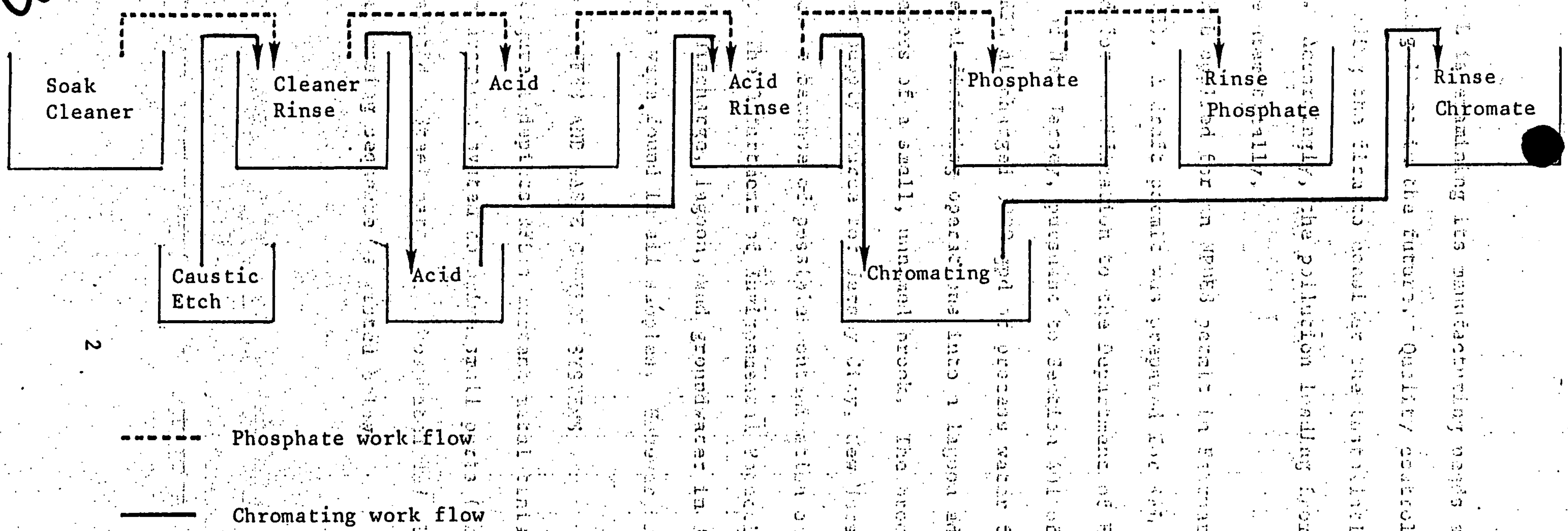
II. DESCRIPTION OF THE FACILITY

RFL industries makes electronic instruments for the aerospace and communications industries. Their Boonton facility assembles components manufactured on site or at other RFL plants, or bought from vendors. At one time the Boonton facility discharged 5000 gallons per day (gpd) of rinse water from its metal-finishing operation which included printed circuit boards. The printed circuit board line was subsequently moved to another RFL facility. Currently, the firm's metal-finishing operation is limited to a small phosphating and chromating line which prepares small electronic parts for painting. The discharges from these processes are intermittent and average only about 100 gpd. There are no other sources of process wastewater at the facility (spray painting is done at the facility but in dry booths). Figure 1 depicts RFL's current metal-finishing operation.

BB2

BB3

Figure 1
METAL FINISHING PROCESS
AT
RFL INDUSTRIES



2

RFL is examining its manufacturing needs and may add additional metal-finishing lines in the future. Quality control considerations, for example, are leading the firm to consider the installation of anodizing and zinc plating lines. Accordingly, the pollution loading from RFL's Boonton facility may change dramatically.

RFL applied for an NPDES permit in February, 1979 (NPDES Permit No. NJ 0032972). A draft permit was prepared for RFL by EPA in March, 1974 and submitted for certification to the Department of Environmental Protection of the State of New Jersey, pursuant to Section 401 of the Clean Water Act. At that time RFL discharged 5000 gpd of process water from their printed circuit board and metal-finishing operations into a lagoon adjacent to a fire pond at the headwaters of a small, unnamed brook. The brook flows to the Rockaway River, a water supply source for Jersey City, New Jersey. The State did not certify the permit because of possible contamination of the groundwater and the brook. The Department of Environmental Protection in New Jersey sampled the plant's discharge, lagoon, and groundwater in July, 1980. High levels of solvents were found in all samples. However, metal concentrations were low.

III. PROCESS AND WASTE CONTROL SYSTEMS

Figure 1 depicts RFL's current metal-finishing operation. It is a chemical conversion system to prime small parts (brackets, panels) before they are painted. Steel parts are phosphated and aluminum parts are chromated. The processing sequence is listed below.

BB4

PHOSPHATING

(1) soak cleaner
(2) spray rinse
(3) acid
(4) spray rinse
(5) phosphate
(6) spray rinse

CHROMATING

(1) caustic etch
(2) spray rinse
(3) acid
(4) spray rinse
(5) chromating
(6) spray rinse

The metal-finishing line processes 10 to 15 small hand racks a day. Rinsewater is turned on only when the line is operating. Each rinse tank runs at about 5 gallons per minute for about 4 minutes per day (4 tanks x 5 gpm x 5 min/day =100 gpd). Rinse water is piped to the lagoon for lime treatment. Floor spills are also piped to the lagoon. Table 1 lists the volumes and dump frequency of the process tanks.

The lagoon is located adjacent to the fire pond about 500 feet from the metal-finishing room. Figure 2 is a rough plan view of the RFL facility. RFL neutralizes the wastewater in the lagoon with lime but does not treat hexavalent chromium (from the chromating process). According to RFL's environmental engineer, the lagoon has never been full enough to overflow. In all likelihood, infiltration through the clay layer is occurring as is indicated by the NJDEP data. Accordingly, although RFL is not technically a direct discharger, the lagoon is a likely contributor of pollution to the brook through subsurface flow.

The proposed NPDES permit limits for RFL prepared by JRB for this report were developed assuming that the firm discharges directly to the brook. The proposal includes limits for pollutants which RFL may discharge in the future because the firm is considering expanding its metal-finishing process.

BB5

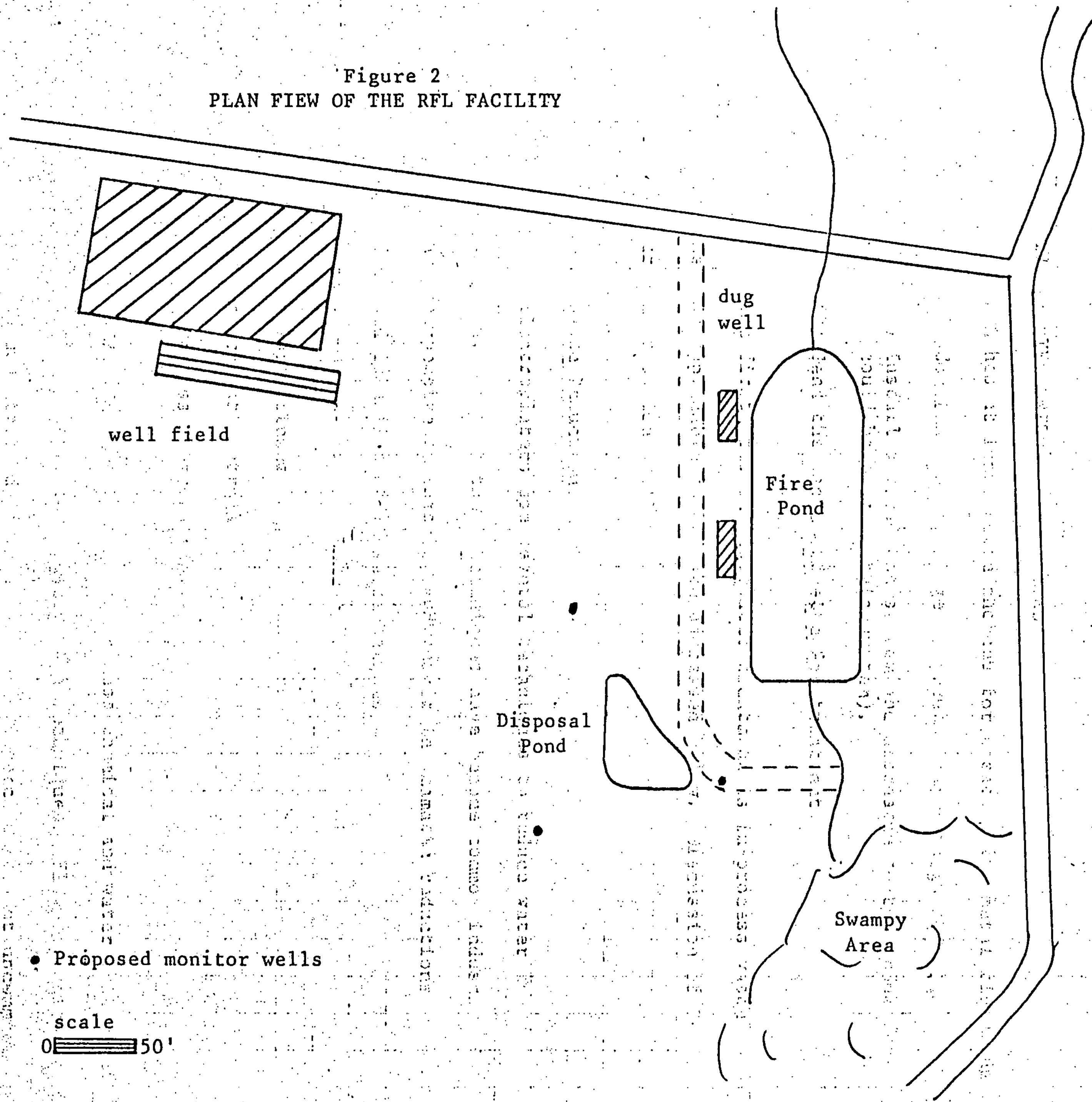
Table 1
PROCESS DUMP FREQUENCIES
AT RFL

Process	Tank Size (gallons)	Dump Frequency
Caustic Etch (Enthone, G-24)	150	6 months
Acid (Enthone, E-93)	150	6 months
Soak Cleaner (Enthone, Q-527)	150	6 months
Acid (10% Acetone 32, 45% HCl, 45% H_2O)	150	6 months
Phosphate (Patclin, 936)	250	yearly
Chromate (Enthone, Al-990)	250	yearly

BB6

BB7

Figure 2
PLAN FIEW OF THE RFL FACILITY



IV. WASTE CONTROL ALTERNATIVES

RFL has at least three choices for treating its metal finishing waste:

(1) Continue to discharge to groundwater through the lagoon.

(2) Install a treatment system and discharge to the brook (the lagoon could be part of this system).

(3) Send the waste off-site for treatment.

The first step in wastewater treatment is in-process waste reduction. Methods applicable to RFL are addressed below. Discussion of RFL's waste treatment options follow.

Waste Reduction

Electroplaters use several techniques to reduce water and chemical consumption. Many of these techniques have become common industry practices, are inexpensive to install, and result in dramatic reductions in waste loads. Included in a list of these techniques are:

- Counter flow rinses
- Spray rinses
- Dragout controls
- Process substitutions.

Very often the savings in process chemical and water costs greatly offset the costs of the conservation techniques. Flow reductions from previously uncontrolled plating shops of 75 percent are not uncommon. A good reference on the effectiveness of these techniques is Water and Waste Control for the Plating Shop, by Joseph B. Kushner, Gardner Publications, Cinn. 1976.

Recent advances on the common waste reduction techniques by electroplating engineers have greatly improved the efficiency of these techniques without

BB8

increasing the cost of using them. A November, 1981 article in the newsletter of the American Clean Water Association is included with this report to illustrate one of these advances. RFL already uses spray rinses in their metal-finishing line, and the firm is using water at a very low rate (100 gpd). Nonetheless, the average flow rate of 5 gpm used at each rinse is still higher than the minimum they could achieve with some of the newer techniques.

For example, a single dragout tank after the chromate and the phosphate tank could enable RFL to reduce wastewater by about 20 gpd without affecting product quality. In addition, the discharge from the acid rinse tanks could be used to feed the caustic and cleaner tanks. This would save at least 20 gpd because the caustic cleaner fresh water lines would be eliminated. These suggestions could reduce RFL's water use from 100 gpd to 55 gpd.

Using these techniques, the firm would have two dragout solutions to treat. However, the process solutions are very dilute and used infrequently. As a result, the dragout solution would not need to be treated very often. Without specific dragout numbers it is hard to calculate how often treatment would be needed, but in all likelihood it would be less than four times a year. Assuming that the dragout tanks are the same size as the process tanks a total of 2000 gallons of dragout solution would need treatment each year or about 10 gpd. Accordingly, RFL could reduce its daily waste generation from 100 gpd to 65 gpd. A more extensive analysis of the firm's metal-finishing operation would probably yield additional savings.

BB9

Waste Treatment Alternative and Treatment Costs

Groundwater Discharge

RFL could continue to discharge to groundwater through the lagoon. Since they do not need an NPDES permit for this discharge, it is not further considered in this report.

End-of-Pipe Treatment

RFL's waste could be treated very inexpensively in a batch treatment system. The components of the system would be:

(1) Chromium reduction for chromating waste

(2) Neutralization tank for all other wastes

(3) Clarifier or filter.

A 250-gallon batch treatment system would be more than enough to properly treat this waste. It would cost approximately $25,000.

EPA cost charts for treating electroplating wastes do not cover system as small as 250 gallons. A consensus of JRB engineers experience in designing plai~~s~~ting waste central systems agrees that $10,000 is a high estimate for installing a 250-gallon batch treatment system. Depending on how sophisticated RFL would choose to make the system, costs could be as low as $3,000. Operating costs would be mini~~m~~mal. They could vary between $100 and $500/month. Therefore, annualized treatment costs would range from about $2000 to $8500 assuming ten-year equipment life and 20 percent interest.

Off-Site Treatment

RFL pays a waste hauler to remove batch dumps from the chromating process. The cost is $200 per 55 gallon drum. Using this figure for hauling RFL's entire waste load, the firm would pay about $200/day for waste treatment.

BB10

This assumes the waste is discharged directly into the drums. Annual hauling costs for RFL would approach $40,000. Unless the hauling charge were lowered, this alternative would not be cost effective.

V. PROPOSED NPDES PERMIT CONDITIONS

Discharge Limits

The proposed permit limits for RFL are shown in Table 2. Many of them are the same as in RFL's 1979 draft permit. The metal limits are for daily maximum and daily average concentrations and approach the minimum solubility of the metal hydroxides. Nonetheless, with process controls and standard chemical physical treatment, RFL should be able to meet these values. However, RFL should only be required to take periodic composite samples to track compliance with daily average limits. They should not be required to check daily maximum values for cost reasons. EPA or State inspectors may check for compliance with daily maximum values, so they should be included in the firm's permit.

RFL does not currently discharge all of the metals in its draft permit. Nevertheless, these metals should remain in the permit because the firm may again use them in their process. Table 2 contains limits for zinc and aluminum (not included in the draft permit) because the firm is considering adding these electroplating processes. However, RFL should not be required to sample for copper, lead, nickel, tin, zinc, and aluminum until they begin using these plating operations. The firm should be required to supply EPA and NJDEP with a start-up schedule for new metal-finishing process lines.

RFL no longer uses solvents in its manufacturing processes. Accordingly, there should not be any significant level of pretroleum hydrocarbons in the firm's discharge. However, NJDEP is still concerned about hydrocarbons in the environment around the RFL facility, and a proposed limit for petroleum

BB 11

BB/Z

TABLE 2

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Effluent Characteristic	Gross - Discharge Limitations kgs/day(lbs/day) Daily Avg	Daily Max	other units (specified) Daily Avg	Daily Max	Monitoring Requirements Measurement Frequency	Sample Type
Flow-m^3/Day (MGD)	N/A	N/A	N/A	N/A	Monthly	N/A
Total Suspended Solids	N/A	N/A	20 mg/l	40 mg/l	Monthly	Composite
Fluorides	N/A	N/A	20 mg/l	40 mg/l	Monthly	Composite
Temperature °C(°F)	N/A	N/A	N/A	30 (86)	Monthly	Grab
Aluminum	N/A	N/A	.5 mg/l	1.0 mg/l	Monthly	Composite
Chromium	N/A	N/A	.5 mg/l	1.0 mg/l	Monthly	Composite
Copper	N/A	N/A	.5 mg/l	1.0 mg/l	Monthly	Composite
Lead	N/A	N/A	.5 mg/l	1.0 mg/l	Monthly	Composite
Nickel	N/A	N/A	.5 mg/l	1.0 mg/l	Monthly	Composite
Petroleum Hydrocarbons*	N/A	N/A	N/A	5 mg/l	Monthly	Grab
Tin	N/A	N/A	1.0 mg/l	2.0 mg/l	Monthly	Composite
Zinc	N/A	N/A	.5 mg/l	1.0 mg/l	Monthly	Composite

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored monthly. The sample type for this parameter shall be grab.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): at the outfall of discharge serial number 001.

*Analysis for this parameter shall utilize the Federal EPA - Environmental and Support Laboratory Method (Freon Extraction - Silica Gel Absorption - Infrared Measurement).

hydrocarbons appears on Table 2. This limit is 50 percent of the value in the draft permit. It was set at this level for two reasons:

(1) If the firm does not discharge solvents, they can easily meet the number.

(2) If hydrocarbons are present in the discharge, the trigger for a violation should be a low one because of the past contamination detected by NJDEP.

Monitoring Frequency

The monitoring frequency listing list on Table 2 is consistent with EPA and New Jersey practices.

Cost Impacts

RFL's wastewater treatment requirements are minimal. The proposed sampling schedule requires only one composite sample per month analyzed for TSS, chromium, petroleum hydrocarbons, and pH. Probable cost for this analysis is about $35.

Converting the annualized cost of treatment (Section IV) to a monthy charge and adding in the cost of analysis, the firm will be paying less than $800/month for waste control (probably much less). This cost is equivalent to less than the salary for one employee and should not severely impact the firm's balance sheet.

Compliance Schedule

A very liberal compliance schedule for RFL is listed below which should begin as soon as the NJDEP decides if the firm can continue discharging to groundwater.

BB13

Action	Months
(1) Preliminary engineering study	2
(2) Final engineering plans/equipment orders	2
(3) Order and install equipment	6
(4) Start-up	1
TOTAL	11

The engineering study has actually begun. RFL has hired an engineering firm to design in-process waste reduction measures for their metal-finishing line. The report was due in December, 1981 but has not been delivered as yet.

BB14

TABLE 1

WASTE TYPES AND CHARACTERISTICS

Hazardous Waste No.	Waste Type	Waste Characteristic
U228	Trichloroethylene	Toxic
U226	1,1,1 - Trichloroethane	Toxic
U077	1,2 - Dichloroethane	Toxic
U079	1,1 - Dichloroethylene	Toxic
U078	Toluene	Toxic
U220	Methylene Chloride	Toxic
U210	Tetrachloroethylene	Toxic
D008	Lead	Toxic
D007	Chromium	Toxic
D006	Cadmium	Toxic
P030	Cyanides	Toxic

ATTACHMENT CC-1